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OCTOBER 1994 • ISSUE NO. 73
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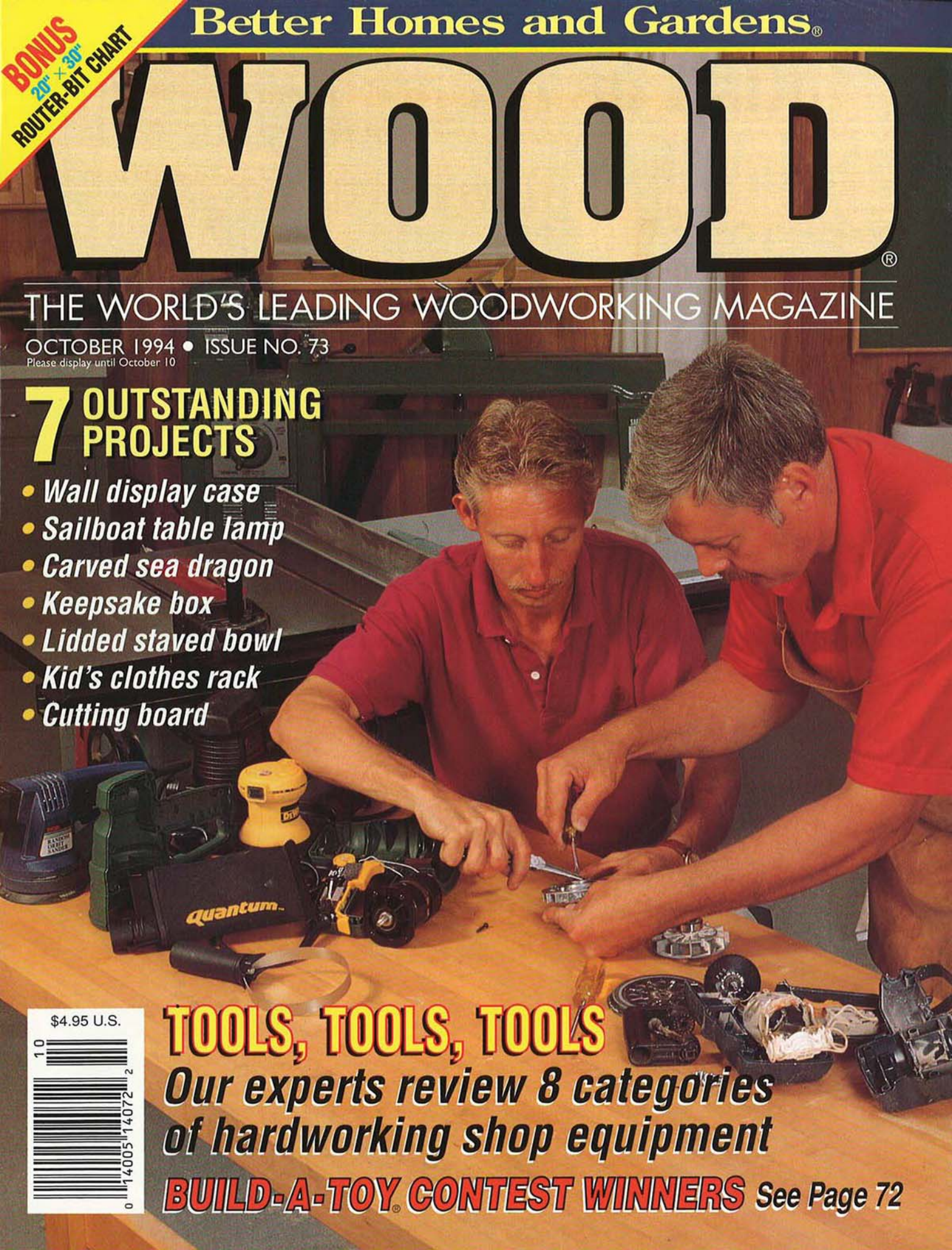

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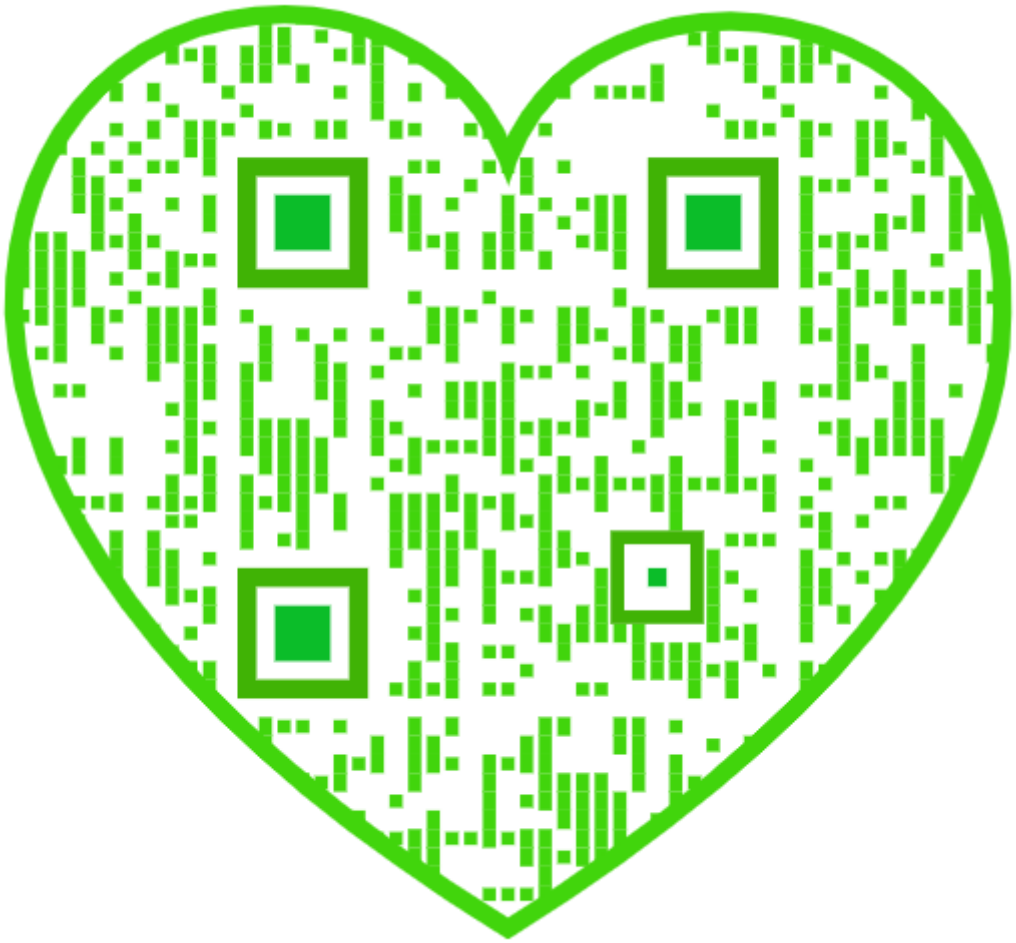
TOOLS, TOOLS, TOOLS

Our experts review 8 categories of hardworking shop equipment

BUILD-A-TOY® CONTEST WINNERS See Page 72



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October 1994 • Vol. 11, No. 7 • Issue No. 73

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***Better Homes and Gardens® WOOD®* magazine** (ISSN-0743-894X) is published nine times a year in January, February, April, June, August, September, October, November, and December by Meredith Corporation, 1716 Locust St., Des Moines, IA 50309-3023. Second-class postage paid at Des Moines, Iowa, and additional mailing offices. Better Homes and Gardens trademark registered in Canada and Australia. Marca Registrada en México. **ONE-YEAR SUBSCRIPTION PRICES:** U.S. and its possessions $22; Canada, $34; other countries, $43. **POSTMASTER:** Send address changes to Better Homes and Gardens *WOOD* Magazine, P.O. Box 55050, Boulder, CO 80322-5050.
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MPA

EDITOR'S ANGLE

Wallace Leeker

A real winner in my book

The Navy Cross, our nation's second-highest military decoration for acts of heroism.

***WOOD*® magazine reader Wallace Leeker of LeMay, Missouri (right) and Design Editor Jim Downing taking a look at one of the 19 World War I vintage biplanes Wallace donated to the 1994 Build-A-Toy contest.**

Each year in the October issue of this magazine, we offer our sincere thanks to all of you who entered our most recent Build-A-Toy® contest. We also feature some of the winning entries editorially to show off the truly marvelous work our readers are capable of. (See *pages 72-73* for this year's winning entries.)

Of course, there's always more to the contest than just the judging and awarding of prizes. There's also the auction and the resulting money that's raised for the Toys For Tots program—$22,000 this year!

And sometimes, we're even lucky enough to meet some of the special people who build and enter their toys. I'll never forget that day last October when Wallace Leeker and his wife Alice paid us a visit, bearing gifts of great joy—19 World War I vintage Spad 5 biplanes he had made for the contest.

While we were standing around talking that afternoon, Alice took me off to the side at one point. She told me, with obvious pride, that Wallace, who is now 72, was awarded the Navy Cross, the nation's second-highest military decoration, for heroism as a Navy officer during World War II. He was on the carrier Lexington VT-19 and piloted several missions in a 3-man torpedo bomber.

Thanks a million, Wallace, for going above and beyond the call of duty—both during World War II and for our Build-A-Toy contest. It's people like you who make America the great place that it is. I'm proud to say that I know you.

One terrific poster

You may have noticed that we've included with this issue the all-new ***WOOD* magazine's Guide To Router Bits**, an information-packed poster we think you'll find indispensable. If you would like to see more posters like this, send your ideas to me at the editorial mailing address at *left*.

Photographs: Larry Clayton; U.S. Navy

Larry Clayton

Print this article

Better Homes and Gardens®
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THE WORLD'S LEADING WOODWORKING MAGAZINE

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This issue's cover wood grain: Basswood

THE RYOBI BT3000. NO OTHER WOODWORKING TOOL BRINGS AS MUCH TO THE TABLE.

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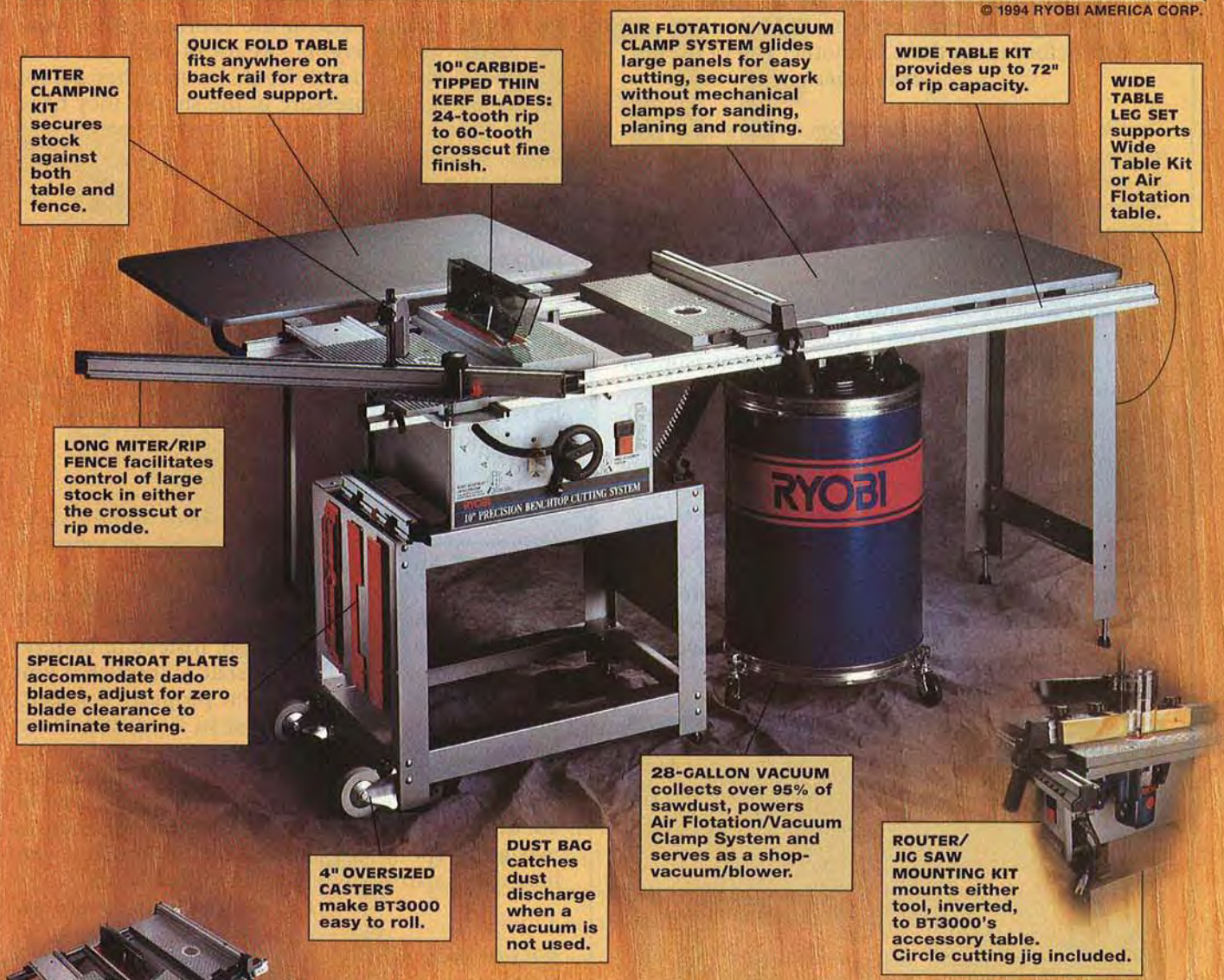
MITER CLAMPING KIT secures stock against both table and fence.
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TALKING BACK

We welcome comments, criticisms, suggestions, and even compliments. Send your correspondence to: Talking Back, *Better Homes and Gardens*® *WOOD*® Magazine, 1912 Grand Ave., Des Moines, IA 50309-3379.

A marble-ous solution

I read the "Ask WOOD" answer in the February 1993 issue concerning a solution to the thickening and "skinning over" of the finish in partially used cans of polyurethane. I have a different solution to this. I add clean marbles to the unused polyurethane until the level of the finish rises close to the top of the can. This removes most of the air space in the can and helps the finish stay fresh. Just clean the marbles before using them in another can of finish.

—Dave Leppert, Jr., Norman, Okla.

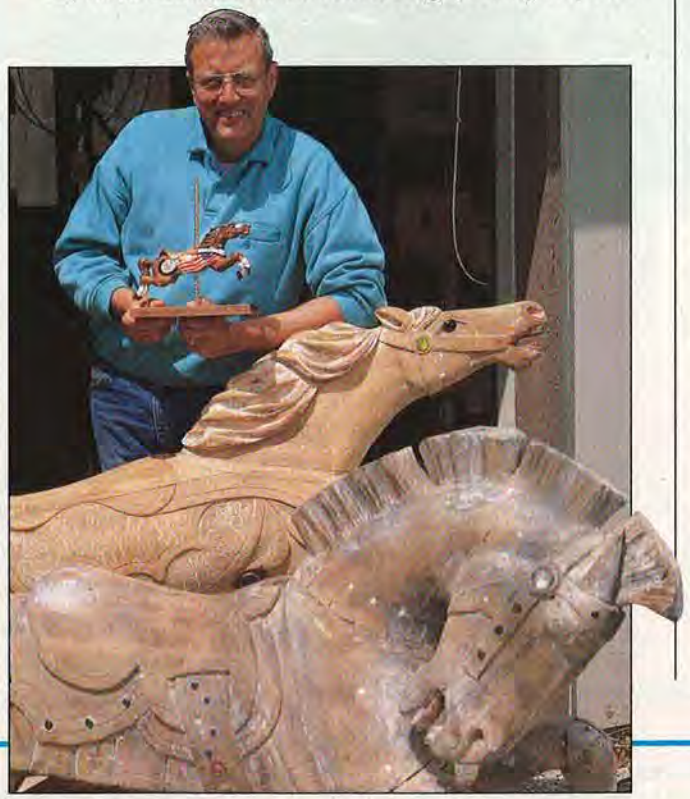
Thanks to Dave and all the other readers who sent us similar suggestions. Sometimes, the simple solutions are the most difficult ones to see.

Horses of many colors

Wow! Thanks for the neat article about Jerry Reinhart and your supportive mention of the National Carousel Association (NCA) in the January 1994 issue. The NCA does a wonderful job of helping to restore and preserve our national treasure of antique carousels.

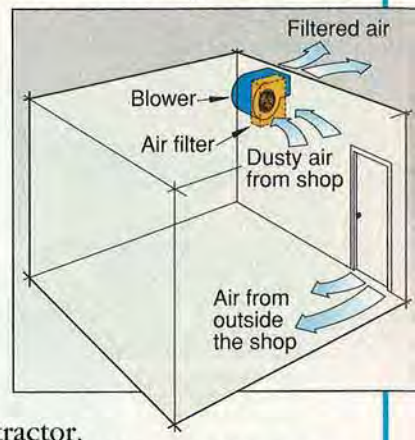
If any of your readers are interested in carving full-sized carousel animals, they may be interested in our carving kits and animals. We were formerly "The Carousel Man" of Rexburg, Idaho. We have moved and changed our name to "Carrousel Magic" and are located at 44 W. 4th St., P.O. Box 1466, Mansfield, OH 44901. Call 419/526/4009. It would be a treat to meet any other *WOOD* magazine readers interested in carousels.

—Sherrell S. Anderson, Carrousel Magic, Mansfield, Ohio



Exhaust fan warning

I was alarmed to see the suggestion of using a furnace fan to exhaust dust from a workshop as shown in Talking Back in the February 1994 issue (see illustration *right*). Readers who use this method of dust removal should be sure they do not induce a negative pressure in the shop if they have a furnace, woodstove, or any other appliance with a flue in the shop area. This negative pressure has the potential to pull deadly carbon monoxide down the chimney and into the shop. If you have any doubt about the safety of your fan installation, contact a heating contractor.



—Tom Reitsma, Ashford, Conn.

Better fire detection

With regard to your article "Simple Strategies to Save Your Shop from Fire" in the February 1994 issue, I have another suggestion. Instead of battery-powered smoke detectors, install AC-powered ionization smoke detectors. When properly installed, these detectors can alert you to fires in remote locations, such as outbuildings, detached workshops, and garages. I have one in my garden shed where I store gasoline-powered equipment, one in my detached woodworking shop, and one each in my utility room and hallway of the house. I can hear these alarms anywhere on my ten acres.

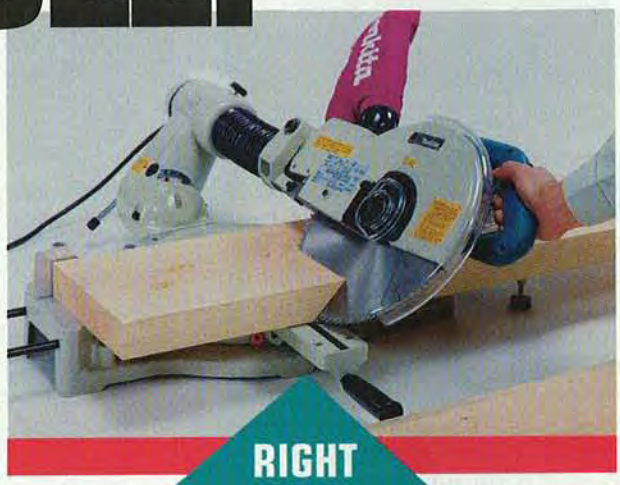
—Jerry E. Brunk, DeFuniak Springs, Fla.

We like your idea of connecting an alarm system with sirens to outbuildings, Jerry. We wanted to learn more about AC ionization smoke detectors, so we talked with Don Cox of Iowa Fire Equipment. He commented, "In this situation, I would prefer a 135° F. heat-to-rise detection system connected to a panel that will trigger a light and sound alarm. The ionization system is designed to detect fine smoke particles in the air, and there is the possibility that the fine wood dust in the shop may interfere with the operation of this system, causing a false triggering of the alarm."

Print this article

THE FINEST SAW FROM ANY ANGLE.

LEFT BEVEL CUT



RIGHT BEVEL CUT

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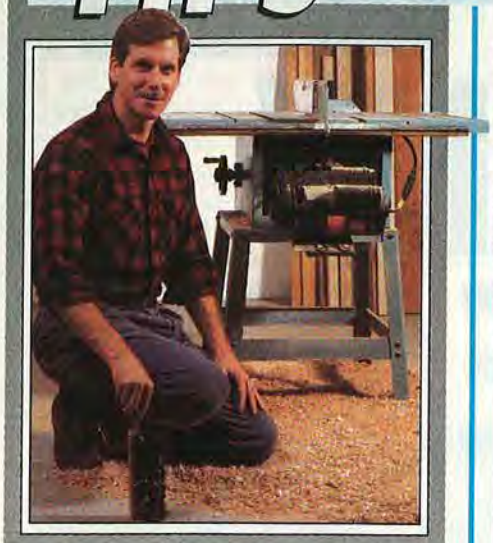
TIPS FROM YOUR SHOP (AND OURS)



For several hundred dollars you can buy a dust-collection system guaranteed to keep your shop clean. But if your tool budget falls into a more modest category (like mine) you wait until you're ankle deep in sawdust before you clean up. So when I saw Peter Hurney's tablesaw dust-collection strategy, *right,* I knew I'd found a great solution. His prize-winning idea saves money, eliminates a problem, and makes woodworking more enjoyable.

Any time you get a great idea like this, we'd love to hear about it. Just send a brief description of the idea and a drawing or photo to:

Shop Tips
WOOD Magazine
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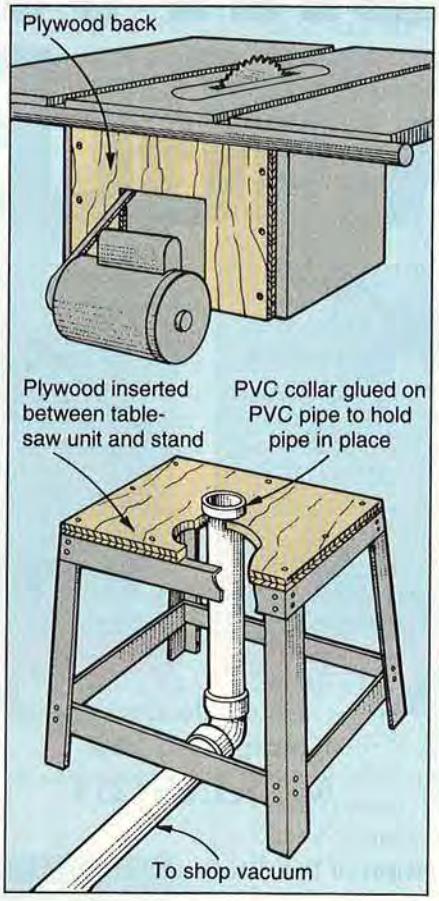
Des Moines, IA 50309-3379

If we choose your tip, we'll pay you $40, plus you'll get a shot at winning a new tool for the top shop tip. We try to avoid shop tips that have appeared in other magazines, so please send yours to only one. Also note that we cannot return submissions. Thanks, and keep sending those tips.

Tom Jackson

Pipe out the dust from below on belt-drive saws

Wood dust messes up a shop quickly and can lead to respiratory problems. Tablesaws with enclosed cabinets easily adapt to dust-collection systems, but belt-driven tablesaws with motors hanging out the back make poor candidates for dust collection.


Plywood back
Plywood inserted between table-saw unit and stand
PVC collar glued on PVC pipe to hold pipe in place
To shop vacuum

TIP: Put a ¾" plywood platform between your saw cabinet and stand, and draw out the sawdust through a PVC pipe. Bore a 4"-diameter hole in the center of the plywood and insert a PVC pipe of the same diameter. Glue a PVC collar on top of the pipe to keep it in place, and then reattach the cabinet of the saw to the stand using bolts that are ¾" longer than the originals. Hook the pipe up to your shop vacuum with a reducer that fits the diameter of your shop vacuum hose and let the machine eat your dust.

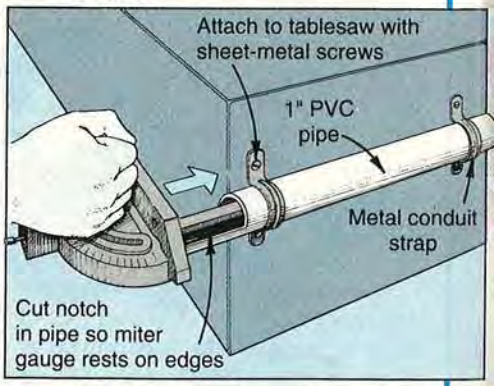
TOP SHOP TIP

—Peter Hurney, Kailua, Hawaii

Peter will receive a Bosch B7000 Corner/Detail Sander for his top-shop-tip prize.

Stash your miter gauge in a PVC holster

Changing from crosscutting to rip-cutting means finding some place to put the miter gauge. It's a nuisance to walk to the bench, put the miter gauge down, and then go back to retrieve it later.



TIP: Build a holster for your miter gauge out of inexpensive 1"-diameter PVC pipe. Cut the pipe long enough to cover the guide bar of your gauge plus 3". To prevent the gauge from rolling over, cut a 3" notch in one end of the pipe, as shown in the illustration *right.* Attach the pipe to the side of your saw with conduit brackets and sheet-metal screws. Now you'll never be more than an arm's reach away from the gauge.

—Mark Albrecht, Houston

Continued on page 8

Caution: This lathe could be habit forming.

Turn stock 36" between centers, 12" over the cast iron bed or swivel the headstock 90° for outboard turning of work up to 16" diameter. Variable speed (500-2000 rpm) allows proper control for out-of-round and offset turning or roughing of green or seasoned wood through final finishing stages.

Anyone who works on a lathe will tell you that turning quickly becomes addictive. That wondrous treasures can be made from otherwise junk wood. That the learning curve is rapid, once you've got the basics. And that you'll probably outgrow your first lathe.

For the most part, we'd agree. Which is exactly why we set out to design the Delta 12" Variable Speed Wood Lathe.

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Continued from page 6

Plywood carrier hoists sheets onto saw table, too

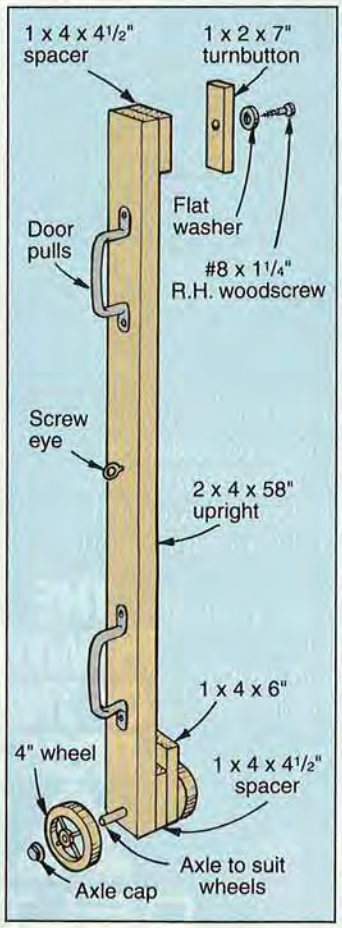
You're going to be cutting a lot of plywood for an entertainment center. The thought of hauling those sheets through the workshop and trying to tip them onto the saw table without damaging them, your tools, or yourself (or all three) isn't making you smile.

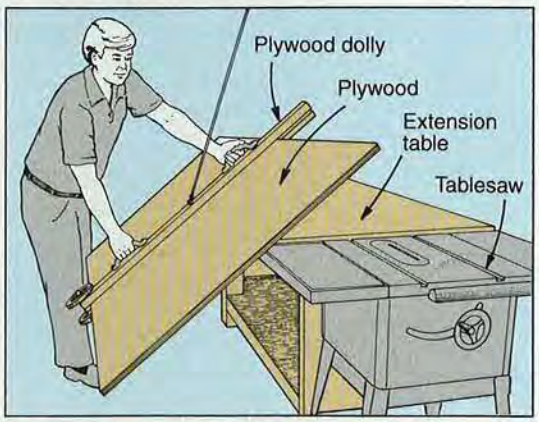
TIP: With this simple two-wheel dolly, a pulley, and a length of rope, rolling the sheets into your shop and hoisting them onto your saw table (equipped with a table extension or work supports sufficient to hold a full sheet safely) will seem almost easy. Refer to the illustration to build the dolly. Drill an 1/64" hole through the center of the 1×2 turnbutton, and attach the part to the center of the top 1×4 block with a #8×1¼" roundhead wood screw. The turnbutton must be free to move. Install sturdy pulls, such as those made for shed doors and gates, and place a heavy screw eye with threads at least 1" long near the center of the 2×4.

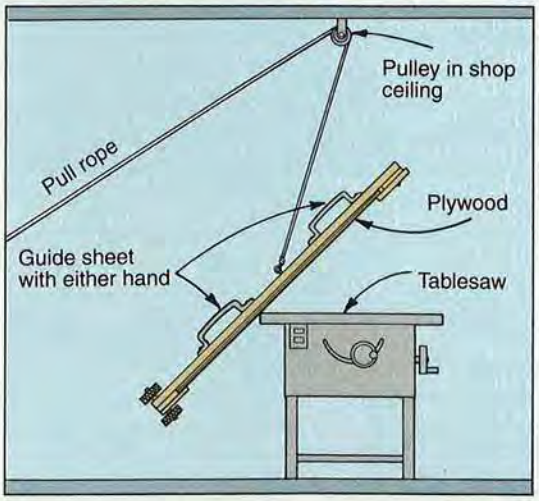
Hang a pulley above your saw table (make sure it can handle the weight of the plywood plus the dolly). Pass a rope through the pulley and attach a hook or snap to the end.

Now, slide the sheet of plywood into the dolly. Secure it at the top with the turnbutton, and roll the plywood and dolly to the saw. Park it with the 2×4 facing away from the saw, and attach the rope to the screw eye. Now, hoist the sheet and dolly, pulling the rope with one hand, and guide it over the saw table. Lower into position, remove the dolly, and put the rope out of the way.

—Vern Baldus, Yuma, Ariz.

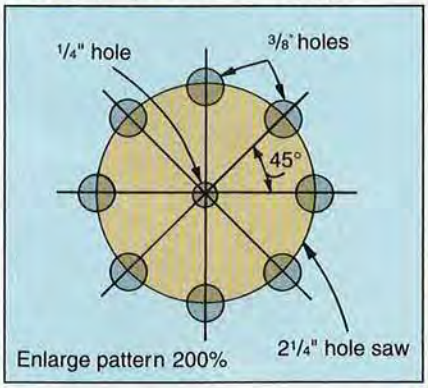

1 x 4 x 4½" spacer
1 x 2 x 7" turnbutton
Flat washer
#8 x 1¼" R.H. woodscrew
Door pulls
Screw eye
2 x 4 x 58" upright
1 x 4 x 6"
4" wheel
1 x 4 x 4½" spacer
Axle to suit wheels
Axle cap

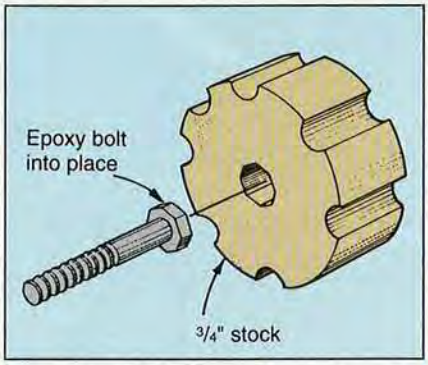




Wood handwheels make adjustment bolts for jigs

When making woodworking jigs, you frequently need to provide for adjustment. Hex-head bolts work fine, but it isn't very convenient to have to loosen and tighten the bolt or scare up a wrench each time you move the jig





TIP: Make an easy-to-grip handle for a bolt from a piece of ¾" thick hardwood stock. With a 2¼" holesaw chucked into your drill press, score a circle on one face of the board. Draw radial lines from the center of the circle 45° apart. At the point where each line intersects the circle, drill a ⅜" hole through the stock. Then, cut out the circle with the hole saw and sand the sharp edges. Enlarge the hole-saw pilot hole to fit the adjustment bolt. Insert the bolt through the hole, and scribe around the sides of the head with an awl or knife. Chisel out the area inside the scribed hex to accept the bolt head. Insert the bolt into the completed handwheel, and epoxy it into place.

—William Bloomfield, North Caldwell, N.J.

Continued on page 10

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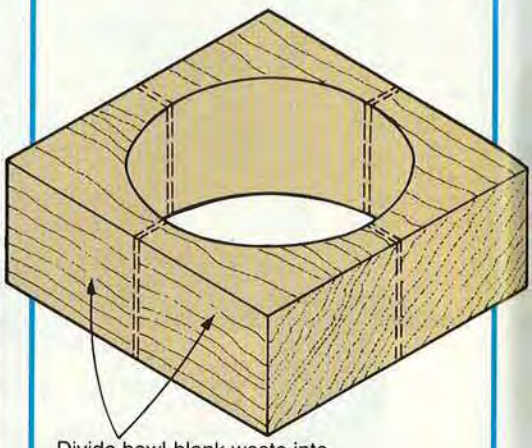
TIPS FROM YOUR SHOP (AND OURS)

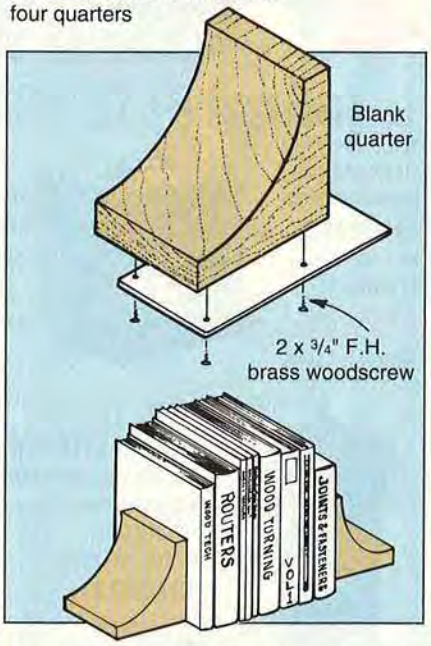
Continued from page 8

Bowl everyone over with bookends from leftovers

It seems a shame to throw away the biggest by-product of bowl turning—that square piece of wood with a big circle bandsawed out of the middle. It's usually such a beautiful piece of wood.



Divide bowl-blank waste into four quarters



TIP: Put your bowl blank leftovers to work as bookends, as shown in the drawings *above*. First cut the waste piece into quarters. Sand and finish the wood, and then attach a metal or thin wooden base to the bottom of the piece. Combine different sizes and types of woods for added interest.

—Boyd Orth, Paradise Valley, Ariz.

Continued on page 12

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4 teeth per chipper for super smooth flat bottom dadoes.

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When we listen to woodworkers, we understand what you mean — after all, we are woodworkers! You told us you needed a dado to cut plywood, solid wood, hardwood veneered plywood, laminates and melamine *chip-free*. You told us that it needed to cut precise slots and maintain accuracy. And it especially needed to accommodate today's undersized plywoods.

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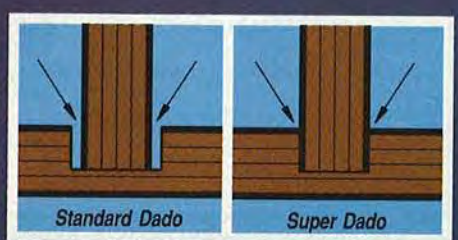
We also packaged all this in a sturdy carrying case. Once you use this new dado, you'll agree that it really is a *Super Dado*.



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TIPS FROM YOUR SHOP (AND OURS)

Continued from page 10

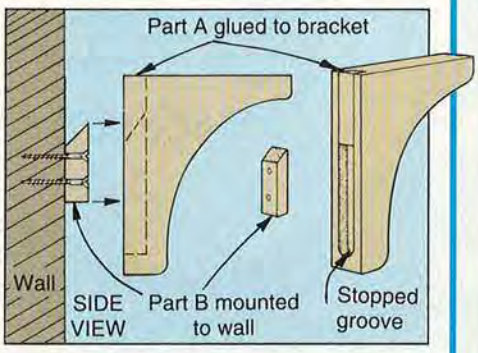
Hidden cleat hangs brackets with no visible support

Wooden display shelves look great, especially on wood-paneled walls. But how do you anchor them to the walls without a lot of metal hardware showing?

TIP: Rout a stopped groove in the back of your shelf brackets, and use that space to make a hidden cleat. Rout the groove as shown in the illustration *below*. Now, cut a cleat that fits snugly into the groove and flush with the back edge of the bracket.

To complete the cleat, cut it in half at a 45° angle, screw the bottom, part "B", to the wall and glue the top, part "A", to the bracket as shown. Slip the bracket over the wall-mounted section of the cleat and you have a strong and completely invisible support.

—Joseph W. Mott, Binghampton, N.Y.



A FEW MORE TIPS FROM OUR WOODWORKING PROS

- You can count on your miter gauge when you need to cut a wedge-shaped piece on a tablesaw. But the task quickly becomes tricky when you need to make a number of wedges exactly the same size. See how we solved the problem with a sliding-table jig on *page 77*. The two-step drawing on *page 78* shows how to use it.
- Trouble with bubbles in your polyurethane? Read our article on *page 44* to learn how the right product can help.

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We also have over 60 years of experience as a high-quality electric motor manufacturer. Panasonic Cordless Power Tools represent the integration of battery, motor and gear technology. Our electro-mechanical expertise is state of the art.

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EXCELLENCE IN CORDLESS TECHNOLOGY

15

Panasonic never forgets that it is the battery pack that makes a cordless tool cordless. And when it comes to battery technology, we are an industry leader.

Innovative 15-minute "Coffee Break" charging system gets you back on the job faster.

We invented the 15-minute "Coffee Break" charging system. This innovative charger reduces down time to a coffee break and will accept most Panasonic 7.2, 9.6 or 12-volt battery packs. It also features a useful self-diagnostic panel that tells you how the battery and charger are functioning, and if there's a problem. For example, when you need a new battery, it will tell you. Its built-in micro computer and timer/temperature sensors help minimize charging time and maximize protection of the battery.

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The 12-volt Panasonic EY6205 featured here has a maximum torque of 182 in. lbs. That means it can handle auger bits, hole saws and put big holes in big wood. In other words, heavy-duty work. And most Panasonic Cordless Drills you choose deliver maximum torque at all speeds, so you get power with precision—excellent when working at low speeds.

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With a maximum torque of 182 in. lbs., the 12-volt Panasonic EY6205 even handles heavy-duty jobs.

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Reinforcement for bowl bottoms

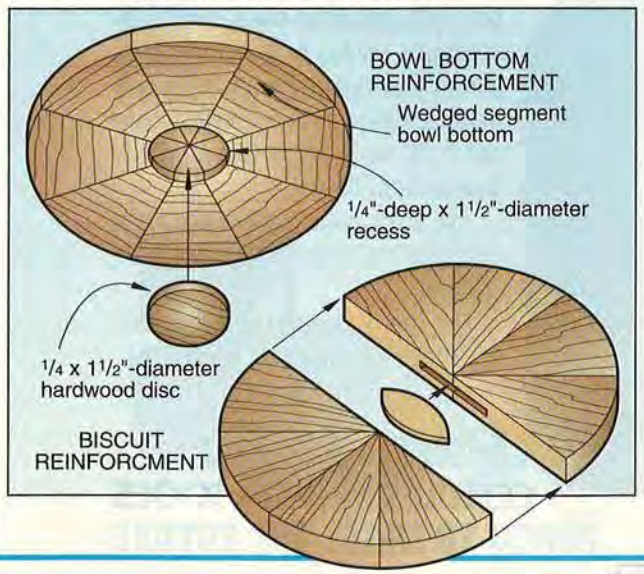
For my turned-bowl projects, I have been cutting triangular segments to glue up for bowl bottoms. This creates a circular grain pattern on the base because the grain runs across each segment. All joints fit tightly, and I assemble them with Titebond glue. Unfortunately, these segments begin to separate after time, particularly in the winter. What can I do to prevent this from happening?

—David A. Taylor, Kingston, N.H.

You can do two things to reduce this joint separation, Dave. First, assemble the bottom and glue it to the rough bowl during periods of low humidity. Wood will crack as it shrinks during winter due to low moisture content in the air of heated buildings. Since wood expands more slowly than it contracts, assemblies made during periods of low humidity will better handle seasonal changes in humidity.

Second, strengthen the weak end-grain joint on the wedges by inlaying a face-grain disc in the underside of the bowl bottom. To do this, drill a 1½- to 2-" diameter flat-bottomed recess, ¼" deep, into the bottom of the bowl. With a scroll saw or lathe, cut a 5/16"-thick disc to fit this recess. Glue this disc into the recess to reinforce the center joints of the bowl bottom, and sand it even with the surface. The disc provides a stronger face-grain glue joint where the stresses are the greatest.

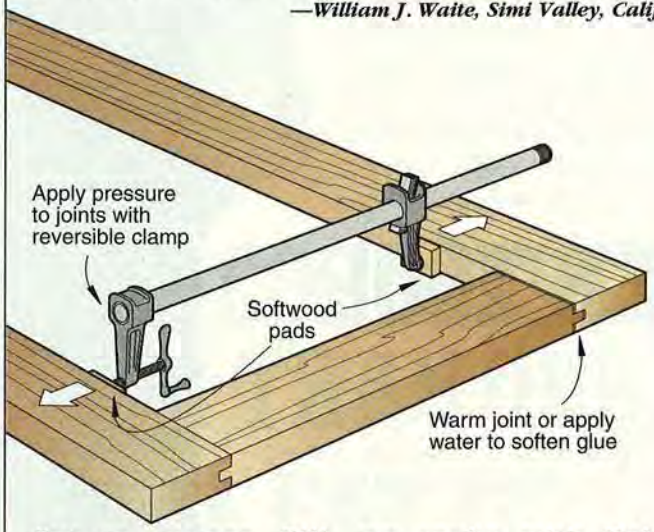
You also can use biscuits or splines to strengthen the bowl-bottom joints. Make two subassemblies of the segments, using half of the pieces in each unit. Clamp these subassemblies together as though you were gluing up the bottom, but with a piece of waxed paper placed in the center joint. Allow each half of the bottom to dry. Then, remove the halves from the clamp, and cut a biscuit or spline slot in both halves. Set the reinforcing biscuit or spline in place and glue the halves together.


BOWL BOTTOM REINFORCEMENT
Wedged segment bowl bottom
1/4"-deep x 1 1/2"-diameter recess
1/4 x 1 1/2"-diameter hardwood disc
BISCUIT REINFORCMENT

The glue is too good

I goofed and glued up an out-of-square door while repairing an antique baker's cabinet. I need to take it apart and re-glue, but unfortunately I did the job too well the first time. I used Titebond glue. How can I separate the joint without damaging the frame of the door?

—William J. Waite, Simi Valley, Calif.



For an answer, Bill, we spoke with Dale Zimmerman of Franklin International (manufacturer of Titebond). Dale told us, "Disassembling a glue joint involves finding ways of removing strength from the joint so the parts can be separated using a reversible clamp or striking the joint with a mallet.

"Do this by applying water, heat, or steam to the joint to soften the glue. Titebond loses half of its holding strength at a temperature of 150° Fahrenheit, allowing easier disassembly. Use a reversible pipe clamp where possible to open the joint. Protect the piece with a face-grain soft pine block if you try to separate the joint with a mallet."

Where there is limited access to the glue line, as in a mortise and tenon joint, we suggest you drill a series of 1/16" holes along the glue line to allow the water or steam better access to the joint. Drill the small holes from the back side of the door or the end of the door, to hide them as much as possible. Also, warm the joint to be separated with an incandescent bulb placed 6-8" away from the wood surface. Watch this warming process closely, and move the lamp away if you see any signs of the finish bubbling or scorching.

Continued on page 18

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ASK WOOD

Continued from page 16

Working on the edge

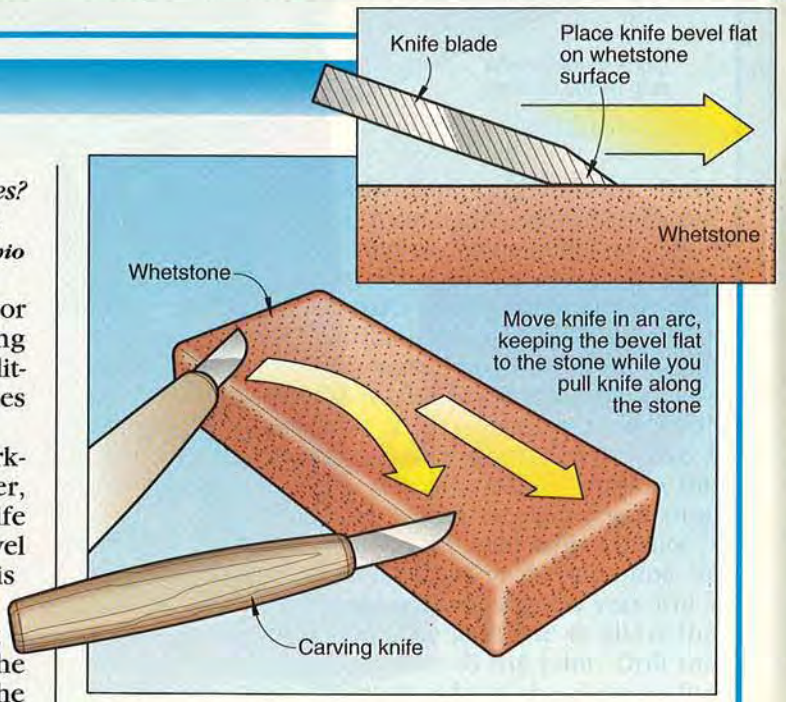
How do you sharpen carving knives with handles? The handle always gets in the way on the grinder.

—Marvin Curtis, Troy, Ohio

Try sharpening your knives with a bench stone or whetstone if you're having trouble sharpening them on the grinder. This procedure does take a little time to master, but a really sharp knife makes the effort worthwhile.

First, secure a coarse whetstone to your workbench and lubricate the stone with oil or water, depending on the type of stone. Place the knife blade on the whetstone, with one side of the bevel flat on the stone. (See inset *right*) Maintain this angle of contact as you draw the knife edge-first along the stone. If your knife has a curved or long blade, you will need to pull the blade across the width of the stone at the same time you draw the bevel along the length of the stone as shown *right*.

Make several strokes on one bevel. Reverse the knife, and make the same number of strokes on the second bevel to remove the burr. Repeat this process, reducing the number of strokes on each bevel until you finish with one stroke on each side.


Knife blade
Place knife bevel flat on whetstone surface
Whetstone
Whetstone
Move knife in an arc, keeping the bevel flat to the stone while you pull knife along the stone
Carving knife

Start honing the knife on a coarse stone to remove any nicks in the blade. Move to a medium stone to improve the edge, and remove the final edge burr with a polishing stone or a leather strop. For best results with the strop, hone the blade with the sharp edge trailing.

Continued on page 21

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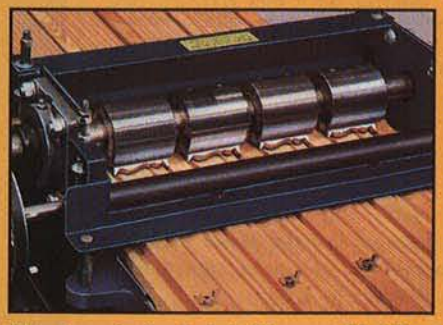

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ASK WOOD

Continued from page 18

Two ways to even out stain

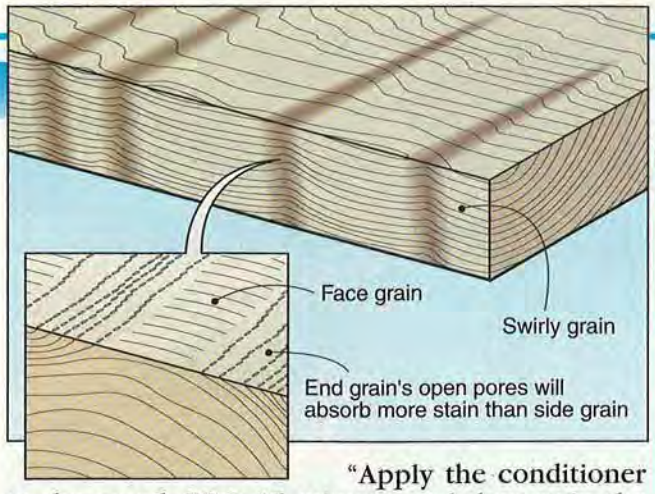
I would like to eliminate or at least minimize the blotchy, uneven stain absorption I experience when finishing birch, maple, and pine. What is the best method of preparing bare wood prior to staining to prevent this effect?

—Alan J. Kostyniuk, St. Paul, Alberta

Alan, the woods you mentioned often have areas of swirly grain where end grain alternates with face grain on the surface of the board. Stain penetrates deeper into the soda-straw-like end grain, causing these areas to become darker. The face-grain areas absorb far less stain and appear much lighter in color. Also, pine contains areas of low-density grain that will absorb more stain than surrounding areas.

We can recommend two techniques for reducing this blotchy effect:

1) Use a wood conditioner to help even out the absorption of the stain by the wood. We contacted Deborah Sherry at Minwax for information about Minwax Wood Conditioner. She said, "This product will slow down and even out the acceptance of stain, although it will not totally eliminate unevenness in color.



"Apply the conditioner to the wood. Wait 15 minutes and then stain the wood. However, don't wait longer than two hours to apply the stain. After two hours, the conditioner will harden to the point that it seals the wood and prevents the stain from penetrating the surface. This results in a lighter color on the stained wood." Deborah also recommends testing the conditioner on a similar piece of scrapwood before applying it to your finished project.

2) Use a gelled stain in finishing your project. Gelled stains help to reduce this blotchy staining effect. These stains do not penetrate as deeply into the wood as other stains, and so will not create intensely dark areas of color.

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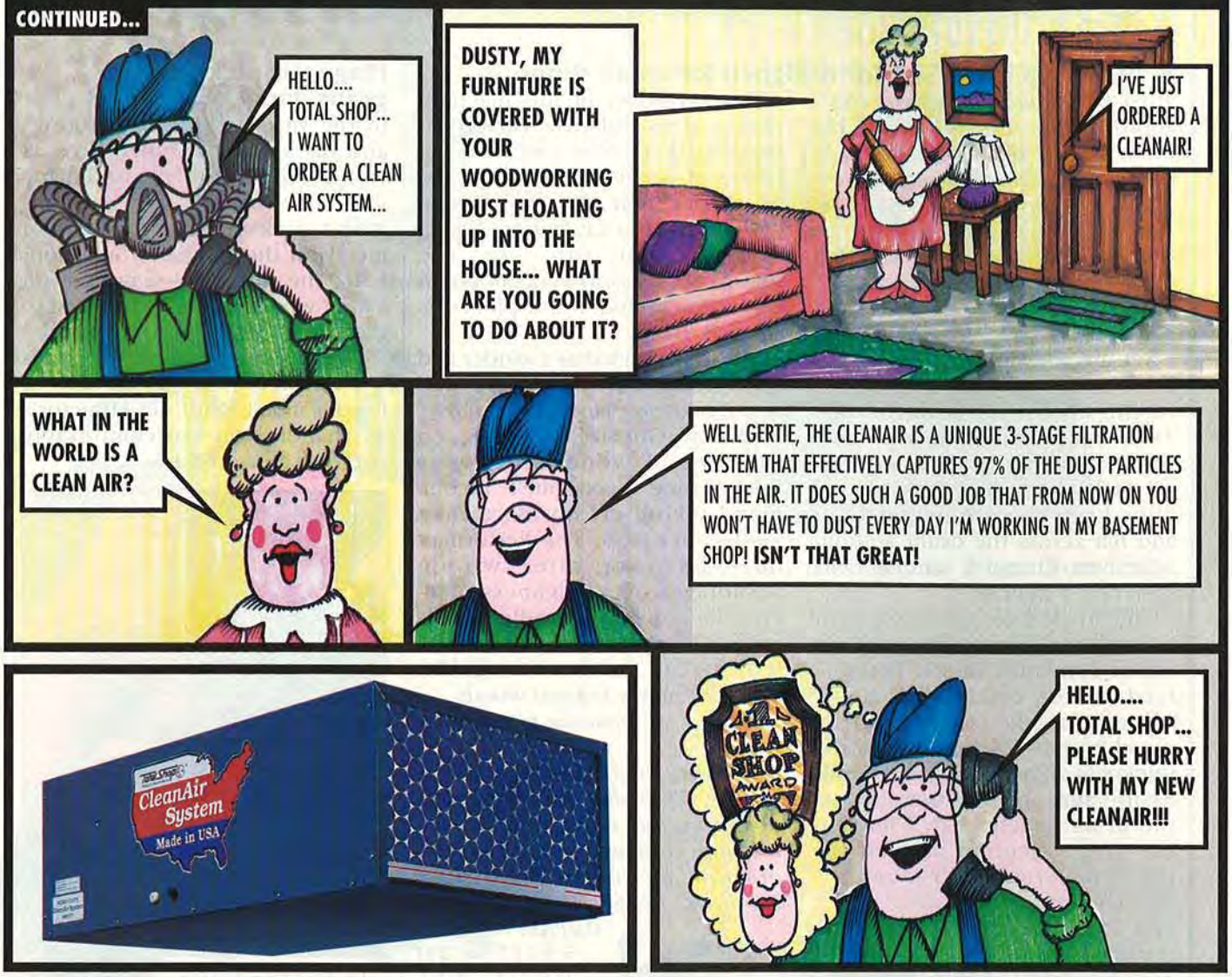
The Adventures of Dusty Pyles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A benchtop drum sander designed for small shops

Most home woodworkers can't afford or find the space for a big drum sander. But Performax tackled those challenges with its new 16-32 Benchtop Drum Sander. The 16-32 designation refers to the 16"-long aluminum sanding drum that is open on one end and allows you to sand a 32"-wide panel with two passes.

Set-up and adjustment of the Performax went smoothly thanks to the clear instructions. The 3×92" strips of cloth-backed sandpaper attach to the drum in a spiral fashion, and spring-loaded clips keep the sandpaper tight and flat across the drum without adhesives. Changing sanding belts took only a minute.

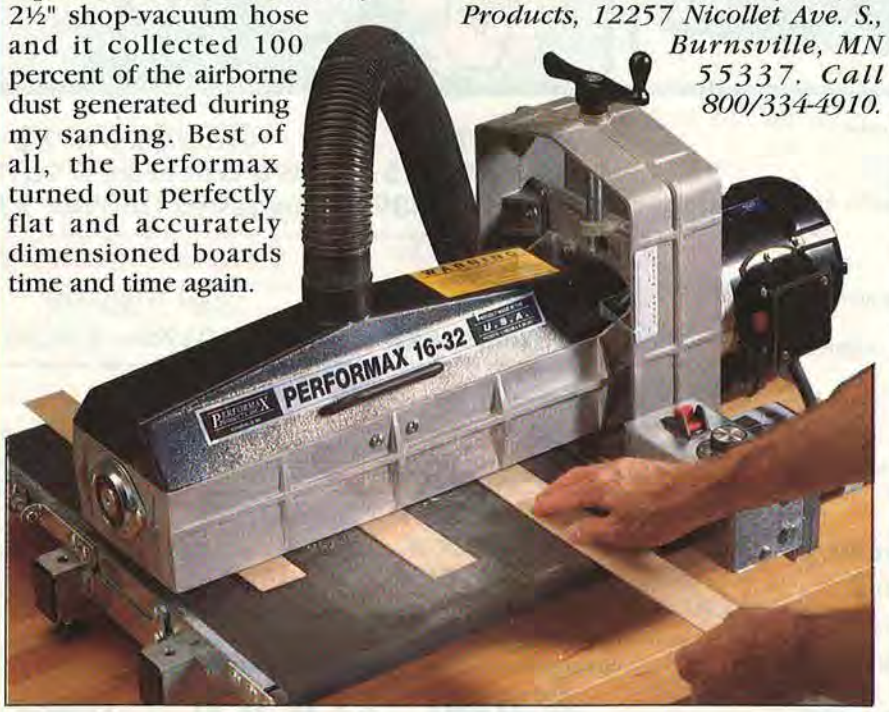
The stock rides on a conveyor belt that prevents snipe with the use of adjustable infeed- and outfeed-tension rollers. Electronic controls vary the feed rate of your wood from 0–10' per minute. The thickness-adjustment gauge reads easily, and one full turn lowers the drum exactly 1/16". I hooked the dust-collection port on the top of the drum cover to my 2½" shop-vacuum hose and it collected 100 percent of the airborne dust generated during my sanding. Best of all, the Performax turned out perfectly flat and accurately dimensioned boards time and time again.

The versatility of this machine makes it useful to a variety of woodworkers. You can sand big beams of wood up to 3" thick and as long as your shop will allow. Or, if you're a crafter or scroll-sawyer, you can use the Performax to sand veneers down to 1/32"-thick, and wood pieces as short as 2¼".

This tool is billed as a sander and thicknesser, but when compared to a thickness planer, the going is a bit slow. Grit size, feed rate, and the type of wood affect your thicknessing speed, but I recommend taking off no more than 1/32–1/16" per pass. The Performax does, however, offer two big advantages over thickness planers—its ability to handle panels up to 32" wide and the fact that it won't tear out reverse grain, knots, or highly figured woods.

—Tested by Bob McFarlin

Performax 16-32 Benchtop Drum Sander, $799 plus shipping, available from tool dealers and woodworking catalogs. For more information write to Performax Products, 12257 Nicollet Ave. S., Burnsville, MN 55337. Call 800/334-4910.



Magnetic pick-up stick grabs dangerous debris

In the yard or driveway, screws and nails can puncture tires as well as injure your feet. And many dust collectors and shop vacuums won't pick up larger pieces of metal on the floor of your shop. Enter the Attractor—a magnet on a long wooden handle designed to grab those pesky pieces of metal.

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In my yard, the Attractor found several stray nails and staples from a roofing job. I also used the tool in my shop to retrieve the nails my shop vacuum wouldn't lift, and to pick up screws and small parts that were lost in the sawdust. Using the Attractor sure beats picking up metal debris by hand, or sifting through the grass, gravel, or sawdust to find a lost nail or screw.

—Tested by Tom Jackson

The Attractor, about $20 at many hardware or homecenter stores. For dealer locations or information, write to P.S. Manufacturing, 2462 160th Rd., Guthrie Center, IA 50115. Call 800/695-8012.

Continued on page 26

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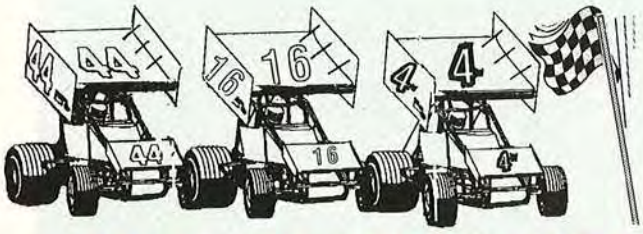

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Circle No. 84

D118

PRODUCTS THAT PERFORM

SHOP TESTED

Continued from page 24

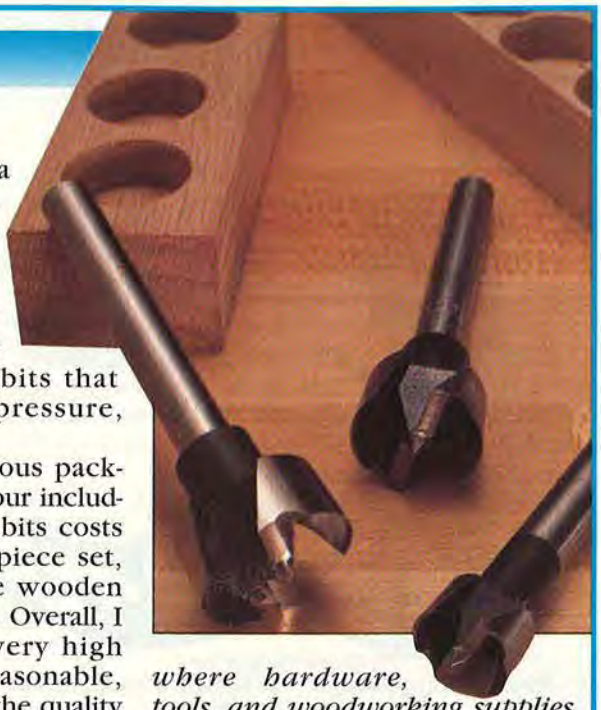
Better boring with high-speed-steel Forstner bits

On the curved outer rim of a Forstner bit, temperatures can reach 300° during normal use, and go as high as 800° if you run the bit faster than the recommended speed. This heat softens the steel, causing the edge to dull faster. And once they dull, Forstner bits are expensive to resharpen—if you can find someone capable of doing the work. Vermont American has developed a new line of Forstner bits made of high-speed steel that can take the heat better than conventional carbon-steel bits.

Before trying these bits, I checked them under a magnifier and saw what I'd consider excellent factory-sharpened edges. I tested the bits on hard maple and oak and found that they cut clean flat bottoms and sides without tearout or signs of burning. For the torture test, I bored a series of 1" holes without letting the bit cool, but saw no evidence of burning on the wood or bluing of the steel edge. Unlike many less-expensive bits that require lots of feed pressure, these bits sliced freely.

The bits come in various packages and sets. A set of four including ⅝", ¾", ⅞", and 1" bits costs about $62. The seven-piece set, housed in a protective wooden box, goes for about $86. Overall, I give these new bits very high marks. The price is reasonable, and I was pleased with the quality and performance.

—Tested by Bob McFarlin



Vermont American High-Speed-Steel Forstner Bits, available where hardware, tools, and woodworking supplies are sold. For dealer locations, write to Vermont American Tool Company, P.O. Box 340 Lincolnton, NC 28093-0340. Call 704/736-8013.

Continued on page 28

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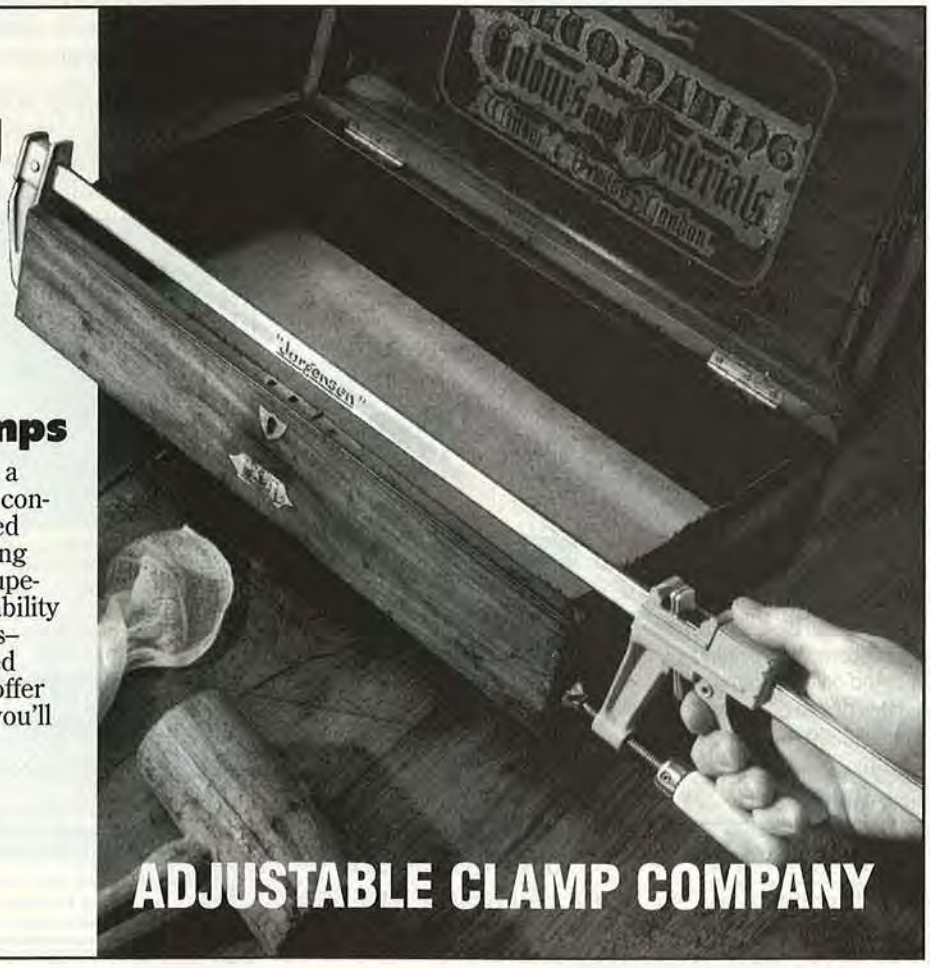

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Here's What Our Customers Say!

Forrest-
You are the best!
Your blades are the best!
Your service is the best!
Your sharpening of my (cheap) dado set made it a new set.
It's a pleasure to do business with you – (I have told this to all of my friends, colleagues and family)

Herbert Needlman
Greenlawn, NY

"NO GEN. PURPOSE BLADE PRODUCED BETTER RESULTS than the FORREST 40 tooth Woodworker II." *Jim Forrest*

Install and leave it for plys & woods to 1½". W. Krier.

Outperformed 36 other PREMIUM blades in WOOD Mag. test P. 45, Sept. 93.

★ ★ ★ ★ ★ ★ ★

SAVE $45

★ ★ ★ ★ ★ ★ ★

Get 9 - $5 sharpening discount coupons on **FORREST** or **OTHER MAKE** carbide blades or dados if ordering before Oct. 31, 1994. Must mention WOOD for coupons & EXTRA BONUS.

(unsolicited)

Attention: Customer Relations Re: Woodworker I & II Blades

Gentlemen:

I recently ordered and received Woodworker I & II saw blades for my radial and table saws. I used the blades received.

I originally avoided your blades because of the cost in comparison with other models on the market. I saw some chips missing in my old blades, and it was time to toss and replace with new blades. I sighed and ate the additional cost and purchased your blades and stiffeners.

I find your blades of the highest quality. They produce a velvet cut with a polished finish which is not surpassed by any other manufacturer on the market. The wood passes through the saw like a hot knife through butter: smooth and with little effort. I see a similar glide whether it is maple, oak, pine, or whether it is thick or thin. Really fine stuff.

Your production staff can be proud of their work. The production quality is not just good, or to specification, it is exceptional.

In retrospect, the minor difference in cost is well worth the final result. Besides, it is the blade that produces the cut for a piece to outlast the maker.

Glad to make acquaintance with your staff and their work.

Respectfully yours,
David Hares, Esq.
Attorney, St. Louis, MO

(From Another Customer)

In closing I would like to add that the Woodworker II blade is by far the finest saw blade that I have ever used. I also have the Forrest dado set which is without a doubt, the king of all dado sets. I work exclusively with red oak and oak veneer plywood and the dado set performs splinter free cuts as advertised.

It is a pleasure to purchase a product that does what it is advertised to do. Thanks for making such a fine product.

Sincerely,
Dennis R. Schule
Owatonna, MN

WOODWORKER II

TABLE-SLIDE & CHOP -MITERS (gen. prps.) & small PORTABLES (Skil, etc.)

Things you asked us for:

With this ONE ALL PURPOSE blade (40 Teeth) you can SMOOTH RIP & CROSSCUT 1"-2" ROCKHARDS and SOFTWOODS with **smooth-as-sanded surface**. PLY-VENEERS (oak/birch) crosscut with NO BOTTOM SPLINTER.

- Mostly 1/8 kerf 15°, ATB and 20° face hook (easyfeed).
- DOUBLE HARDER and 40% STRONGER CARBIDE.
- Ends **blade changing** (does rip, combo and crosscut).
- Ends **scratchy saw cuts** (for the rest of your life).
- Ends **second step finishing** (jointing or sanding).
- Ends **cutting 1/16" oversize** to allow for RESURFACING.
- Buy and **sharpen ONE** blade instead of 3 (24T rip, 50T Combination, 80T Crosscut).
- *Strongly* recommend our *.001* flat **large stiffener-dampener** against out side of blade for smoothest, **QUIETEST CUTS** by this and any other blade.
- Use 30T if ripping mostly 2" - 3" hardwoods.
- Side wobble held *.001* - others .004/.010 is common! RAISE for THICK woods, LOWER for THIN woods and *perfect cut everything!* All 5/8" holes, unless otherwise noted.

	List	SALE		List	SALE
14" x 40T x 1" BORE	$215	$149	9" x 40T	$146	$109
14" x 30T x 1" "	195	139	30T	125	99
12" x 40T x 1" "	183	129	*8-1/4" x 40T 3/32	136	99
12" x 30T x 1" "	162	119	8" x 40T 3/32	136	99
10" x 40T 1/8 & 3/32	156	119	30T 3/32	115	89
30T 1/8 & 3/32	135	99	7-1/4" x 30T 3/32	112	69
			New 6" x 40T 3/32	139	89

5/8" holes std. Boring up to 1-1/4" $7.50 extra - Shipping $4.50

Saw Boss
** NEW For Sears & Makita Table Saws*

QUIET! *Also help all your other blades to cut better.* Use our 1/8" DAMPENER STIFFENERS, against one side

4" - $21
5" - $24
6" - $25

Tryable and RETURNABLE. CUTS NOISE to 1/2 or 1/4. Stops vibration, flutter, cutting noise and blade ring. Parallel and flat to .001 • 7" and larger available.

5/8" holes std. Boring up to 1-1/4" $7.50 extra. Others available. Add $2.50 Shipping.

REDUCE NOISE 50%-75%

WOODWORKER I - For TABLE and RADIAL SAW

this trim and crosscut ALL PURPOSE blade gives scratch free POLISHED cuts on all materials RIP or CROSSCUT up to 2".

- All 60T and 3/32" *THIN* kerf 30° ATB and 5° face hook on 10" dia and under. 12" and 14" are 20° ATB 1/8" K.
- DOUBLE HARDER and 40% STRONGER carbide.
- THIN KERF:

Saves 1/3 wood loss on each cut, radial or table. Feeds easy when used for moderate rip and crosscut on table saw. **Reduces "JUMP IN"** greatly for better "PULL CONTROL". Practically **eliminates bottom splinter** on RADIAL-CROSS CUT.

- Totally stops ALL bottom and top splinter on ply veneers in push-cut mode on RADIAL.
- Our STIFFENER STRONGLY RECOMMENDED AGAINST outside of blade only for best cuts.

Made and serviced in USA for your benefit.

	List	SALE
14" x 60T x 1" 1/8"	$224	$159
12" x 60T x 1" or 5/8" 1/8" K	198	139
10" x 60T x 5/8" 3/32" K	162	129
9" x 60T x 5/8" 3/32" K	156	119
8" x 60T x 5/8" 3/32" K	150	109
New 8-1/4" x 60T x 5/8" 3/32" K	150	109

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NEW DADO KING DELUXE *DADO SET* cuts *ALL* 1/8 - 29/32 **flat bottom** grooves WITH or CROSSGRAIN all woods. OAK, BIRCH, VENEER PLYS, and MELAMINE. NO SPINTERING due to unique 4T Neg. Face fillers and 24T outside saws. *OUT PERFORMS 29 + 32 OTHER DADO SETS-WOOD Mag.*, Oct. 91, pg. 62,63 "Best Value"

***No tearout on all five woods tested."** *-Fine Woodworking July/Aug, 1991*

Boring up to 1-1/4" $25 per set — SALE! 10% OFF $5.50 Per Set Shipping — NEW 3/32 Chipper & Shims incl.

8 - 5/8" Bore List $321/**SALE $289** • 10 - 5/8" & 1" Bore List $389/**SALE $349**

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(very good on chop saw too!) STOP SPLINTERING those SPLINTERY OAKS, HARDWOOD VENEERS and *thin* 2 SIDE LAMINATES ON PARTICLE BOARD. FOR FASTER FEED RATES AND MORE ABSOLUTE SPLINTER CONTROL.

NEW PRICES EFFECTIVE SEPT. 1, 1993

DURALINE Hi-AT

***Note:** Fine Woodworking Editorial Nov./Dec. 1988 No. 73, pg. 65, S.N. recommends high alternating top bevel (ATB) thin kerfs and large blade stiffeners for smoothest cuts on RADIAL SAW, etc.*

Jim Forrest, President and designer microscoping cutting edge.

All 5/8" holes. Boring up to 1-1/4" $7.50 extra
Larger holes - time basis. Shipping $4.50

	LIST	SALE
7-1/4" x 60T 3/32"	$149	$129
8" x 80T 1/8" & 3/32"	202	$169
9" x 80T 1/8" & 3/32"	207	$179
10" x 80T 1/8" & 3/32"	207	$159
SPECIAL SALE10" ONLY $159		
12" x 80T x 1" 1/8"	212	$181
12" x 100T x 1" 1/8"	253	$215
14" x 80T x 1"	232	$197
14" x 100T x 1"	265	$226
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Sears 8-1/4" & Delta	8-1/4" x 60T x 5/8"	170	99
Hitachi 8-1/2" DeWalt 8-1/2" & Ryobi	8-1/2" x 60T x 5/8"	179	109
Delta	9" x 80T x 5/8"	204	119
Ryobi-Makita & all	10" x 80T x 5/8"	207	129
Hitachi & B&D & DeWalt	12" x 80T x 1"	229	139
Ryobi-Makita	14" x 100T x 1"	266	179
Hitachi	15" x 100T x 1"	277	189

For good gen. prps. cuts use Woodworker II 30T & 40T or Woodworker I

Use small stiffener where possible

WE RECOMMEND OUR FACTORY SHARPENING as some local sharpening creates problems with **Micro-chipped edges** reducing blade life & cutting quality. 2-4 DAYS ON THESE AND ALL MAKES OF FLAT FACE & CONCAVE CARBIDE TIP SAWS. SHIP VIA UPS. Typical 10 x 40T $15.00, 60T $17.75. Add return UPS $4.50 or 2nd Day Air $8.

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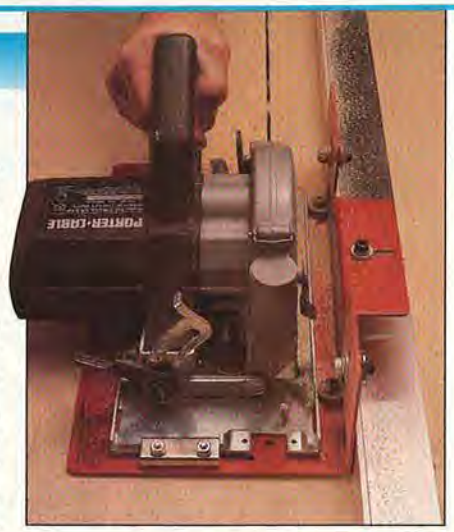
PRODUCTS THAT PERFORM

SHOP TESTED

Continued from page 26

Cut plywood down to size with this panel-saw system



The panel saws favored by cabinet shops cost $300 and up—too much for most home shops. And my homemade straightedges don't always give me accurate results. The new Portable Panel Saw System from Penn State Industries delivers precise results at a price most of us can afford.

The system consists of two extruded-aluminum-alloy fences—one 64" long, the other 108"—and a tracking fixture that attaches to the baseplate of your saw. The tracking fixture glides up and down the fence on five sealed ball-bearing rollers, and a blade-alignment guide ensures that the sawblade travels parallel to the fence. To use the system, just clamp the fence to your workpiece, clip your saw onto the tracking fixture, align the blade, and begin cutting. The company also sells a router baseplate for $10 that, when used in conjunction with the tracking fixture, doubles the system's versatility.

I used the Portable Panel Saw System to cut sheet goods for a linen cabinet and got on-the-money results. The saw practically floats along the tracking fixure. With the 108"-long fence I could cut an 8' sheet of plywood corner to corner, something I can't do with any other straightedge or system. The 64" fence provides the same corner-to-corner capability for a 4' sheet of plywood.

The tracking fixture comes with pre-drilled holes and two clips that hold the baseplates of most saws. If your baseplate measures more than 11½" long, however, you'll need to drill holes in it that align with the pre-drilled holes in the tracking fixture, then run the screws up through your baseplate instead of using the clips. With or without the clips, however, you can leave the fixture attached to your saw and still use it.

—Tested by Dave Henderson

Portable Panel Saw System, $99 ppd., Penn State Industries, 2850 Comly Rd., Philadelphia, PA 19154. Call 800/377-7297.

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Includes:
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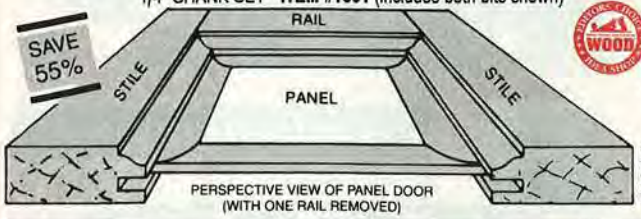
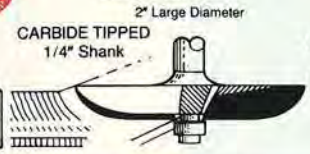


PERSPECTIVE VIEW OF PANEL DOOR (WITH ONE RAIL REMOVED)

SET ALSO AVAILABLE IN 1/2" SHANK - **$79.95 - ITEM #1302**

RAISED PANEL BIT SUPPLIED WITH BALL BEARING



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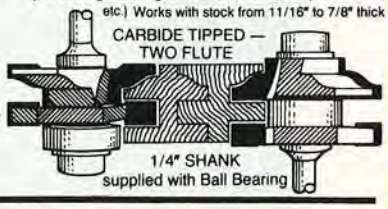

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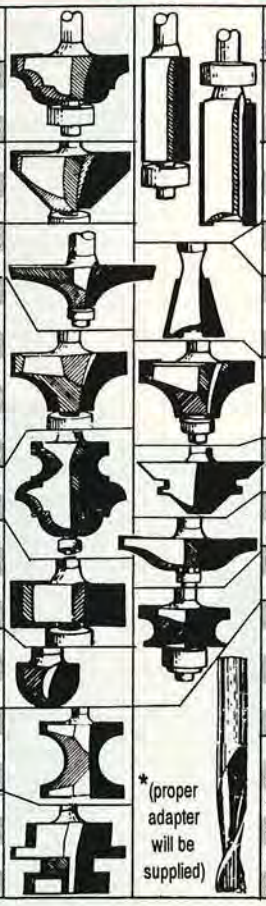
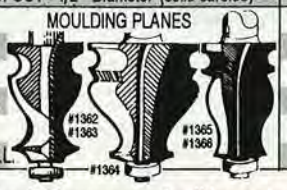
#1308	CLASSICAL - 3/16" Radius — 5/8" Cutting Length	1/2"	$22.50
#1309	45° CHAMFER - 3/8" Cutting Length	1/4"	$13.00
#1310	45° CHAMFER - 5/8" Cutting Length NEW !	1/4"	$15.00
#1311	45° CHAMFER - 5/8" Cutting Length	1/2"	$17.00
#1312	THUMBNAIL - 1- 3/16" Large Diameter	1/4"	$18.50
#1313	THUMBNAIL - 2-1/2" Large Diameter	1/2"	$35.00
#1314	ROUND OVER - 1/8" Radius	1/4"	$11.00
#1315	ROUND OVER - 3/16" Radius	1/4"	$11.00
#1316	ROUND OVER - 5/16" Radius	1/4"	$14.00
#1317	ROUND OVER - 1/4" Radius NEW !	1/2"	$12.00
#1318	ROUND OVER - 3/8" Radius	1/2"	$15.50
#1319	ROUND OVER - 1/2" Radius	1/2"	$17.00
#1320	ROUND OVER - 3/4" Radius	1/2"	$21.00
#1321	MULTIFORM MOULDING - 15/16" Carbide Height	1/4"	$40.00
#1322	MULTIFORM MOULDING - 2" Carbide Height	1/2"	$40.00
#1323	SLOT CUTTER - 3/8" Deep	1/4"	$14.00
#1324	RABBETING - 1/4" Deep NEW !	1/4"	$15.00
#1325	RABBETING - 3/8" Deep	1/4"	$13.00
#1326	RABBETING - 3/8" Deep	1/2"	$13.00
#1327	CORE BOX - 3/8" Large Diameter	1/4"	$11.00
#1328	CORE BOX - 1/2" Large Diameter	1/4"	$13.00
#1329	CORE BOX - 3/4" Large Diameter	1/4"	$15.00
#1330	BULL NOSE - 1/2" Diameter of Circle	1/4"	$16.00
#1331	BULL NOSE - 3/4" Diameter of Circle	1/4"	$21.00
#1332	BULL NOSE - 3/4" Diameter of Circle	1/2"	$21.00
#1333	TONGUE & GROOVE - Straight	1/4"	$29.00
#1334	TONGUE & GROOVE - Straight	1/2"	$29.00
#1335	TONGUE & GROOVE - Wedge	1/4"	$29.00
#1336	TONGUE & GROOVE - Wedge	1/2"	$29.00



*(proper adapter will be supplied)

ITEM NUMBER	DESCRIPTION (ALL 2 FLUTE)	SHANK SIZE	PRICE
#1337	FLUSH TRIM - 3/8" Diameter — 1" Cutting Length	1/4"	$ 7.50
#1338	FLUSH TRIM - 1/2" Diameter — 1" Cutting Length	1/4"	$ 8.00
#1339	FLUSH TRIM - 1/2" Diameter — 1-3/16" Cut. Length	1/2"	$ 8.00
#1340	PATTERN / FLUSH TRIM - 1/2" Diameter	1/4"	$15.00
#1341	PATTERN / FLUSH TRIM - 3/4" Diameter NEW !	1/4"	$17.00
#1342	PATTERN / FLUSH TRIM - 3/4" Diameter	1/2"	$19.00
#1343	KEYHOLE CUTTER - 3/8" (bit not	1/4"	$ 8.50
#1344	KEYHOLE CUTTER - 1/2" shown)	1/4"	$ 9.00
#1345	DOVETAIL (HSS) - 1/4" Diameter — 7-1/2°	1/4"	$ 6.50
#1346	DOVETAIL - 1/2" Diameter — 14° NEW !	1/4"	$ 6.00
#1347	DOVETAIL - 1/2" Diameter — 14°	1/2"	$ 6.50
#1348	BEADING - 1/4" Radius	1/4"	$13.00
#1349	BEADING - 3/8" Radius	1/4"	$15.50
#1350	BEADING - 1/2" Radius	1/4"	$17.00
#1351	LOCKMITRE - 7/8" Cutting Length NEW !	1/4"	$32.00
#1352	LOCKMITRE - 1-1/8" Cutting Length	1/2"	$45.00
#1353	OGEE RAISED PANEL - 2" Large Diameter	1/4"	$28.00
#1354	OGEE RAISED PANEL - 2-3/4" Large Diameter	1/2"	$32.95
#1355	EDGE BEADING - 3/16" Diameter of Circle	1/4"	$15.00
#1356	EDGE BEADING - 5/16" Diameter of Circle	1/4"	$15.50
#1357	SPIRAL UPCUT - 1/8" Diameter (solid carbide)	1/4"*	$ 9.00
#1358	SPIRAL UPCUT - 1/4" Diameter (solid carbide)	1/4"	$12.00
#1359	SPIRAL UPCUT - 1/4" Diameter (solid carbide)	1/2"*	$12.00
#1360	SPIRAL UPCUT - 3/8" Diameter (solid carbide)	1/2"*	$24.00
#1361	SPIRAL UPCUT - 1/2" Diameter (solid carbide)	1/2"	$29.00
	MOULDING PLANES		
#1362	1" C.L.	1/4"	$24.95
#1363	1-5/8" C.L.	1/2"	$29.95
#1364	1-5/8" C.L.	1/2"	$31.95
#1365	1" C.L.	1/4"	$31.95
#1366	1-11/16" C.L.	1/2"	$31.95



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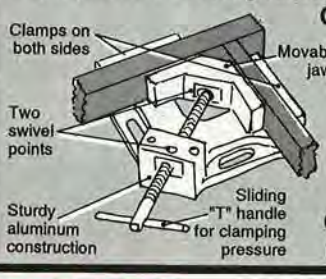

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Circle No. 1251, 1350, 2250

Connecticut sportsman Ron Mirabile combined two great hobbies—fishing and woodturning—and now happily plugs away at both.

THE LURE OF WOOD

Sssssssssst, the line sings off the reel spool. Plop! Widening rings slowly form on the water around the red and white lure. Then the rings fade, no longer drawing attention to the intruder on the lake's otherwise still surface.

But from below, eyes have focused on the floating object. From its weedy lair, a largemouth bass slowly begins his inspection of the possible meal. With a flick of its fins, the fish swims out from the submerged hideaway, still watching the form backlit on the water, and still unsure.

Then, the new arrival twitches once, twice, and darts forward. Glug. Glug. Triggered by the movement and sound, the fish streaks to the surface. In a slashing stroke, needle-sharp teeth snatch the prey.

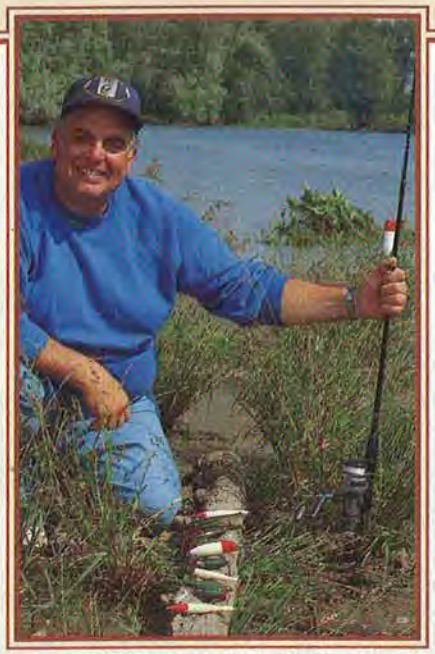
"Got him!" yells Ron Mirabile, his raised arms pulling the rod back and into a tight arch. As his left hand grabs the reel

Continued

Ron's red-and-white top-water bait resembles a favorite of yesteryear. And in his hands, it's a fish-getter, too.

handle, the lake surface erupts. "He's going to tailwalk," says the fisherman, keeping his eyes on the leaping bass as his hands strive to keep the line taut. "Nice fish," yells his companion.

Hours later, at the dock where the day on Massachusetts' Quabbin Reservoir began, Ron and his partner tally the catch: Three largemouth bass, one nearly five pounds; a four-pound smallmouth bass, and two large pike approaching 26" each. All taken on wooden, handcrafted top-water plugs created one at a time by a man who reveres the great luremakers of yesteryear.



Ron Mirabile poses with his handcrafted lures along the Connecticut River.

Reviving baits of old

Rocky Hill, Connecticut, may not seem like a mecca for bass fishermen. At least not like Missouri's Truman Lake or Arkansas' Bull Shoals. But yes, you can stalk bass in the Connecticut River before it reaches the ocean. And an hour away via the Massachusett's Turnpike lies Quabbin, a 350,000-acre, man-made reservoir fishermen scramble to ply.

Ron Mirabile, 50, knows every square foot of the reservoir and every niche of shoreline on waters closer by. He's been a fisherman since boyhood, and in his hands a lure comes alive. But in recent years, only a Weir lure—one of the line of handmade wooden casting baits he's learned to perfectly craft—will do.

"I named them 'Weir' lures after my home town," explains Ron, his elbows resting on top of his worktable, a plug in his hands. "Weir actually means a type of woven trap that Indians placed in a stream. From it, they gathered fish. When the founders of my hometown in Massachusetts arrived, there was one there, and they named the town after it."

Ron also calls his lures classics, because many of them are patterned after once-famous wooden lures produced by luremasters of days gone by. From Ron, you'll hear names like Fred Arborgast, E.F. Pflueger, James Heddon, and William Shakespeare. In many cases, the lure styles they created are still bought and used today, but made of plastic. Yet, with the lures Ron skillfully produces, he also honors the memories of lesser-knowns who once made successful or very unusual fishing lures. Yet, for one reason or another, these also-rans have passed into oblivion except for those scooped up by a growing number of lure collectors.

"Today, you have to pay top dollar for them. For example, there's a lure called The Dreadnaught that was made in 1910 by the Moonlight Bay Lure Company. It's worth about $3,000. An orginal Hahn's magnet lure, if you can find one, sells for about $500," notes the lurecrafter. "And a Holzapel mushroom bass bait will cost you about the same."

Although original models of once-prolific productions by Heddon and other noted makers sell for less, Ron points out, they're still pricey. "An old Heddon lure from 1920 can bring $400 from a collector."

On the other hand, Weir look-alikes—turned from basswood and handpainted—usually cost about $20, and buyers can display them *or* fish them.

The red-and-white Bass-O-Reno was a favorite top-water lure of yesteryear. It swam crazily to attract a strike. Ron's white-and-green model mimicks it.

Fish fashioning

Ron actually got into making fishing lures at his wife's insistence. "It was 1990, and I was spending my evenings exercising with the television's remote control," recalls Ron, laughing at the thought. "I had terminated a lucrative, long-term relationship with dentistry, and was looking around for another business venture to get into. But all in all, I was really bored with everything. Then Jean came to my rescue."

Behaving like an injured minnow, the blue-and-white Florida torpedo attracted game fish. Ron changed the color to dappled red, but the action remains the same.

The way Ron explains it, his wife suggested that he combine his love of fishing with the woodworking that he had always wanted—but never had the time—to learn how to do. And so began Ron's lurecrafting.

"One night I just sat down in my easy chair with a knife and a piece of wood and started to carve," Ron explains. "The lure didn't turn out to be very attractive, but it sure was fun. After carving a half dozen or so by hand, though, I realized that carving wasn't the way to go if I was going to make them to sell."

Unlike the well-equipped and skilled woodworker who searches for just the right projects to build, Ron's approach was the opposite. He knew what he wanted to make, but lacked the tools and knowledge to get it done. However, he was relentless in digging out the solutions.

"There I was, in my forties, with no hands-on woodworking experience," he comments. "My dad had never taken the time to show me how to do anything. Why, even when I built my first home, I ended up handing him the nails! So, my luremaking really started from scratch."

Ron ended up buying just the tools he needed, though: a small used Dremel lathe with a duplicating attachment, a drill press, and a benchtop tablesaw. To this day, those are the only power tools he uses to make his lures.

"Mass-production isn't my goal," says Ron. "If it were, I'd go into plastic injection molding. What I want to do is make limited editions of famous lures from yesteryear, and some of my own design. I don't plan on competing with the industry's big names."

And he doesn't. You won't find Weir lures in a sporting-goods store or mail-order outdoor catalog. Ron's content to sell them at craft shows throughout New England, to fishing friends, and to those who want a special lure made to order.

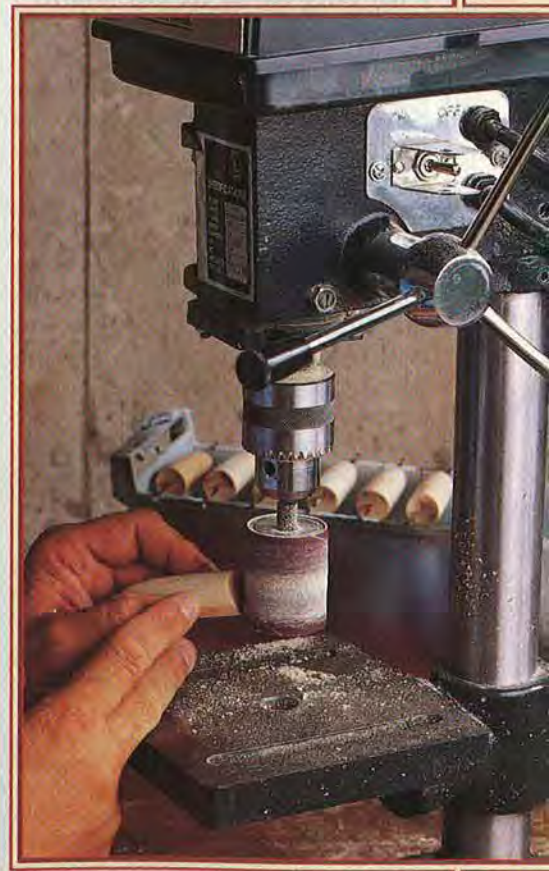
Quality to match history

While Ron was expanding his knowledge of woodworking tools and developing the skills to use them, he was also learning about lure history. And in that field, there's a lot to learn.

"In my research I've discovered that there were more than 7,000 different types of fishing lures made prior to about 1960," says Ron. But in making lures, my goal is to provide an affordable replica of a collectible. And for the fisher-

Continued

For chugging top-water lures, Ron creates a concave surface on the nose with his drill press and a sanding drum.



man, a lure that catches fish. I've learned what has worked in the last 100 years, and I build those that do."

Ron knows that he could—if he wanted to—make at least 500 different kinds of lures. Instead, he focuses on a few.

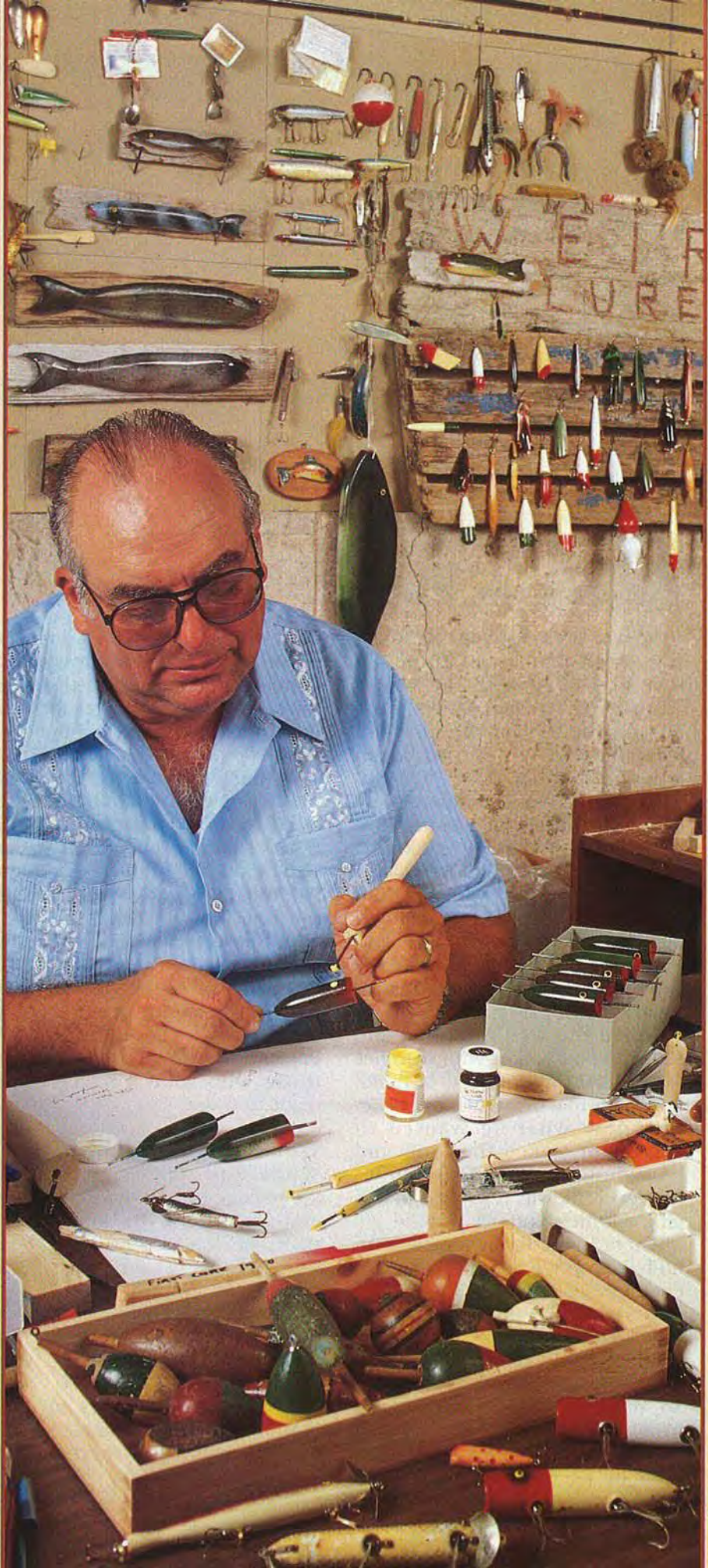
"For actual fishing lures, I've come across a combination of styles that work exceptionally well. And I will put my quality up against any lure in the country!" he says with conviction.

According to Ron, the wooden lures of old were fashioned from cedar, pine, balsa, or basswood. For his plugs, Ron prefers the latter. "It's denser and harder than balsa and cedar, and therefore more durable" says the craftsman, "and its weight gives the lure more heft for casting." Ron also might have added that basswood turns easily and finishes smoothly, two plus factors for making fishing lures.

Plugging away at the lathe

"Considering that I handcarved my first lure four years ago, I think I've come a long way," says Ron as he pulls his chair up to the lathe to begin a demonstration. After chucking a ¾"-square, 4"-long piece of basswood between centers, he pulls a template from the drawer and inserts it into the duplicator. Turning on the machine, he engages the block with his tiny gouge. White curls begin to peel from the wood. Almost gleefully, he says, "Now I can turn one every six minutes."

Even though Ron refers to his luremaking as "non-production" it would be silly to think he completes them one at a time. In reality, he makes them in batches of 25 to 50. But due to the individual paint job that each receives, not any of them will look exactly



A corner of the basement provides all the room needed for Ron's lurecraft. Divided bins store screws, spinners, screw eyes, split rings, and hooks. Note the painted bodies suspended by small brads fore and aft.

The Weir Classic Baby Lucky 13 with its feather on the rear treble hook is patterned after Heddon's original red-and-white model that many fishermen counted on.

alike. Before painting, though, Ron has lots of preparation in order to achieve a fine finish.

While each lure body is still chucked in the lathe, the maker smooths its surface with 80- to 150-grit sandpaper. Then, removing the body from the lathe bed, Ron inserts a small brad at the nose and at the tail to serve as supports during the finishing process. When he has completed this stage for the entire batch, the second phase begins—but in the yard outside his walkout basement door.

Spraying a fool-the-fish finish

"I spray the body with clear wood sealer, then when it's dry, I sand lightly with 220-grit paper," explains Ron. "Next comes two coats of white enamel undercoat. Then, I sand the body again with 400-grit wet-or-dry to smooth any raised grain."

Now Ron begins the artistic part of his work, the color finish—an aspect that will make or break a fishing lure. "Each lure has its ground color—the overall hue that it will be, such as green, white, black, etc.," he says. "Next, it can have contrasting spots and speckles. Then, on lots of models, I have to spray on a red target area. That's the bright spot that fish see as a wound. It fools them into attacking."

Ron has become a master with the spray can. His clever and skillful use of it fools you into believing his lures were airbrushed. Such special effects include light speckles here and there, colors that fade and blend into one another, and a baked-on enamel feel that results from two coats of epoxy enamel covered with a final one of clear spar varnish. Not counting drying time, each plug takes but a minute to paint.

Later, when all the lure bodies have dried, Ron returns them to his shop. At his workbench, he fastidiously applies spots of color for eyes ("The head of a finishing nail dipped in paint works great!"), then the screw eyes, split rings, and treble hooks. Lots of work for a $10 lure?

"I'll have from 15–30 minutes in each," says Ron. "But again, I'm not trying to become South Bend [a tackle manufacturer]. Besides, who knows?" A smile spreads across his face as he holds the bait to the light. "I could become a legend in my own time."

On his miniature lathe, Ron can turn a basswood lure body in six minutes. The duplicator attachment in the foreground allows accuracy from one lure to the next in a body style by guiding the gouge along the wood.

Do lures tease your interests?

Ron buys his often-hard-to-find lure hardware from various sources, and he'll be happy to supply you with what you need. For a price list of Ron's lures, hardware, or answers to questions, write with a SASE to: *Weir Classic Lures, P.O. Box 5125, Rocky Hill, CT 06067.*

Written by Peter J. Stephano
Photographs: Steve Uzzell

CUTTING-BOARD

Any way you slice it, this clever-cleaver cutting board and matching knife holder offer loads of service in the kitchen. Hang the two-part project on the wall as an attractive accent. Then, when you need to dice a veggie or summer sausage, just lift the board off its peg, draw a knife from the holder, and chop away. When you're done, clean with a soapy washcloth and rinse.

Start with the cutting board blank

1 Cut a piece of ¾" cherry (A) and a piece of ¾" maple (B) to 8×17". Using double-faced tape, adhere the two pieces face-to-face, with the edges and ends flush where shown in Step 1 of the four-step drawing *below*.

2 Enlarge the gridded pattern and make *three* photocopies of it. Use spray adhesive to adhere the first pattern to the top blank. Set the other two patterns aside for now.

3 Bandsaw a smooth curved line through the center of the taped-together blanks. Using a wooden wedge (the edge of a metal tool can dent the wood), pry the pieces apart and remove the tape. (You'll have enough pieces to make two cutting boards.)

4 Resaw a piece of walnut (C) to ⅛×¾×18". Spread an even coat of glue along all mating surfaces of each piece (A, B, C), and glue and clamp in the configuration shown in Step 2 of the drawing, keeping the ends of A and B flush and the walnut strip (C) protruding slightly at each end. Set the cutting board lamination aside for now.

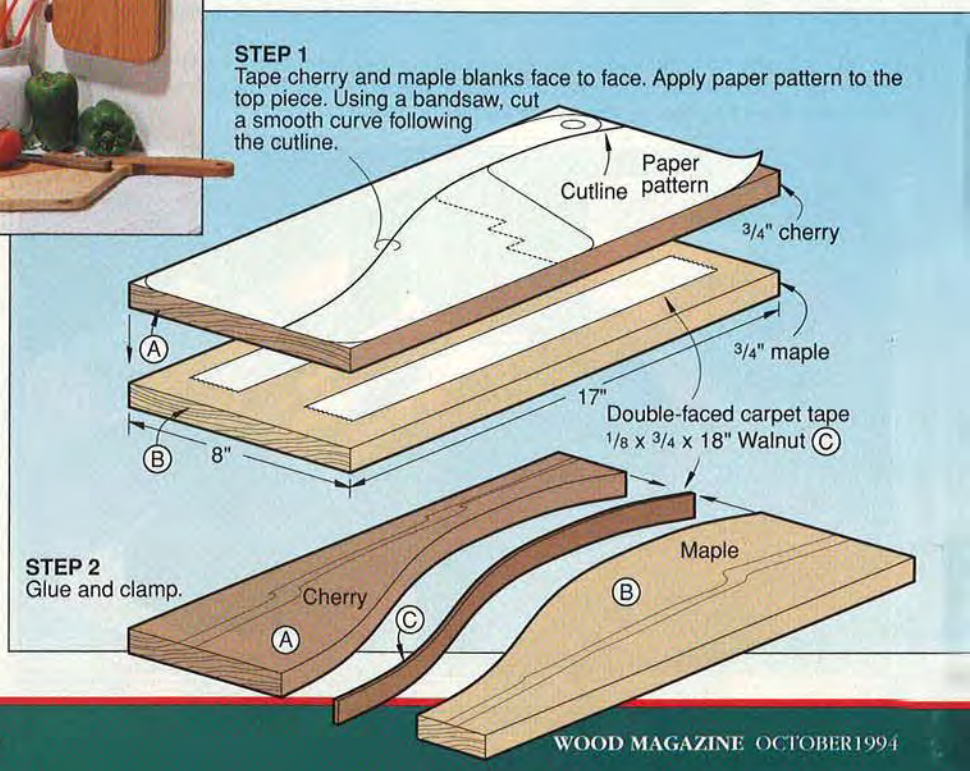
Let's construct the knife holder next

1 From ¾"-thick oak, cut two pieces to 8×17" for the front and back (D).

2 Cut the ⅛"-thick walnut spacers (E, F, G) to size. (Our spacers were used to space 41S, BT7, and 103S Chicago Cutlery knives.) Check the width of your knife blades first to verify the gap between the spacers before cutting the spacers to width.)

3 Locate and glue the walnut spacers to the back oak blank (D) where shown on Step 3 of the drawing *below*. Check that the spacers are square to the ends. Allow to dry about ten minutes, then glue and clamp the top oak board in place.

continued



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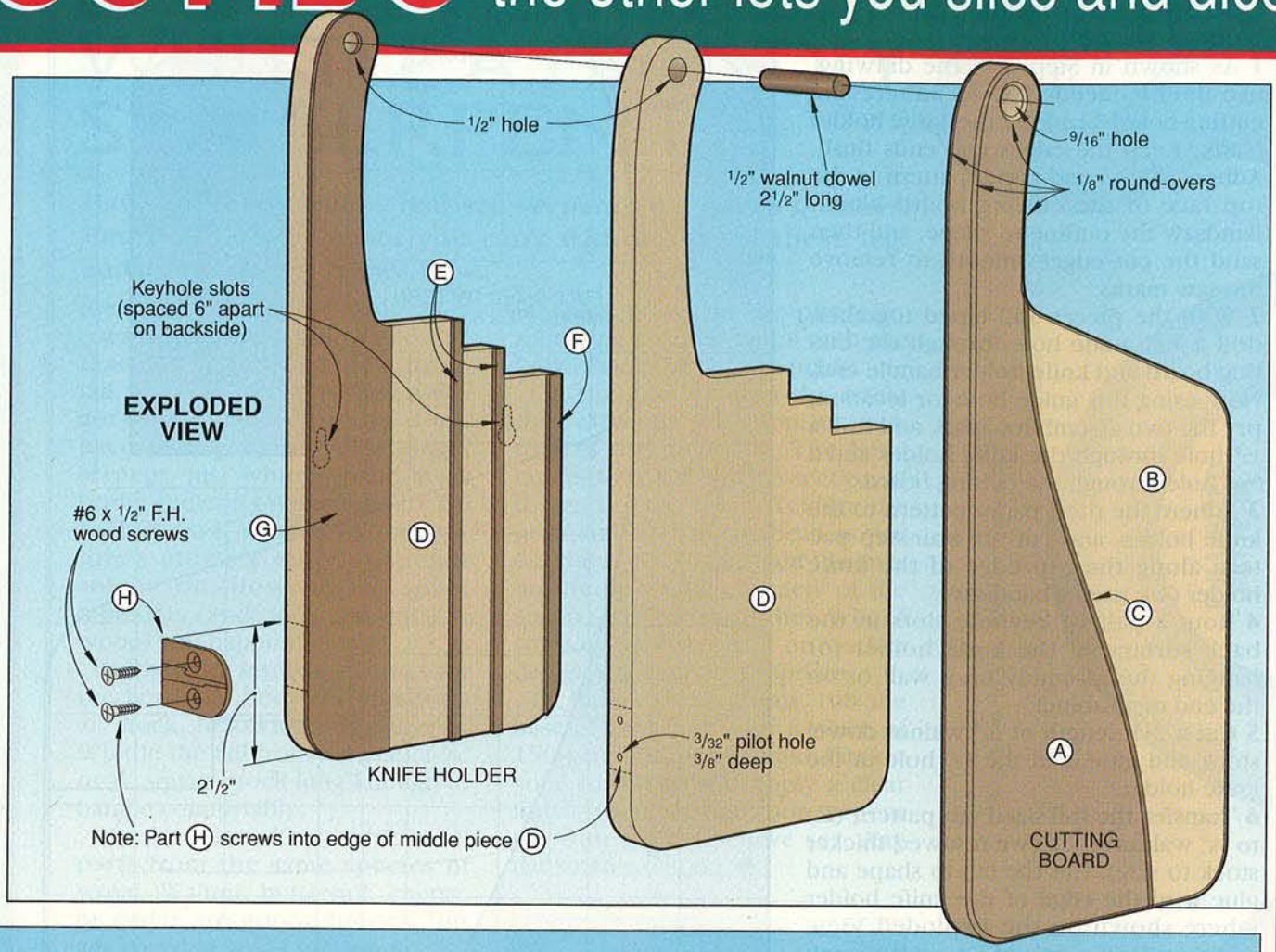
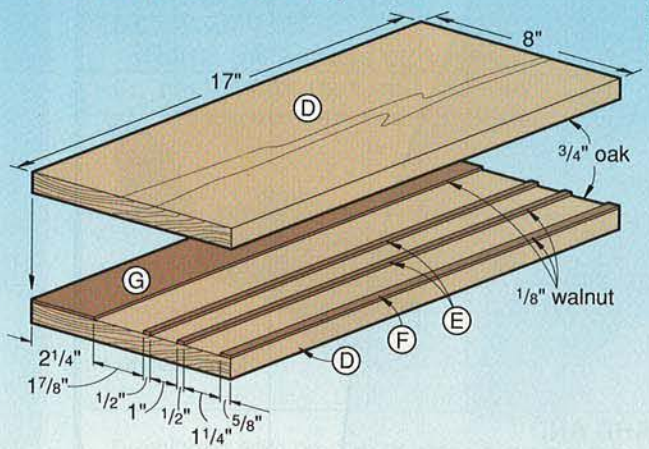
COMBO One part stores knives; the other lets you slice and dice



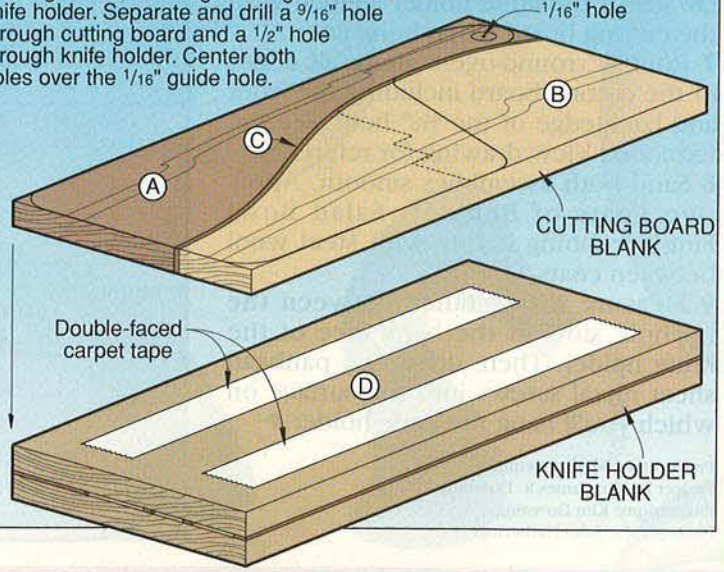
STEP 3

Locate and glue 1/8" walnut spacer strips (E, F, and G) to bottom oak board. Allow to dry about 10 minutes. Glue and clamp top oak board to bottom assembly.



STEP 4

Tape cutting board blank to knife holder blank, adhere second pattern to the top blank, and cut to shape. Drill a 1/16" guide hole through cutting board into knife holder. Separate and drill a 9/16" hole through cutting board and a 1/2" hole through knife holder. Center both holes over the 1/16" guide hole.



CUTTING-BOARD COMBO

Cut both assemblies to final shape

1 As shown in Step 4 of the drawing, use double-faced tape to adhere the cutting-board blank to the knife-holder blank. Keep the edges and ends flush. Adhere the second paper pattern to the top face of the cutting board blank. Bandsaw the outline to shape, and then sand the cut edges smooth to remove the saw marks.

2 With the pieces still taped together, drill a 1/16" guide hole through the cutting board and knife holder handle end. Now using this guide hole for location, pry the two assemblies apart, and drill a 1/2" hole through the knife holder and a 9/16" hole through the cutting board.

3 Adhere the third paper pattern to the knife holder, and cut the stair-step pattern along the top edge of the knife holder (we used a bandsaw).

4 Rout a pair of keyhole slots in the back surface of the knife holder for hanging the assembly on a wall or on the end of a cabinet.

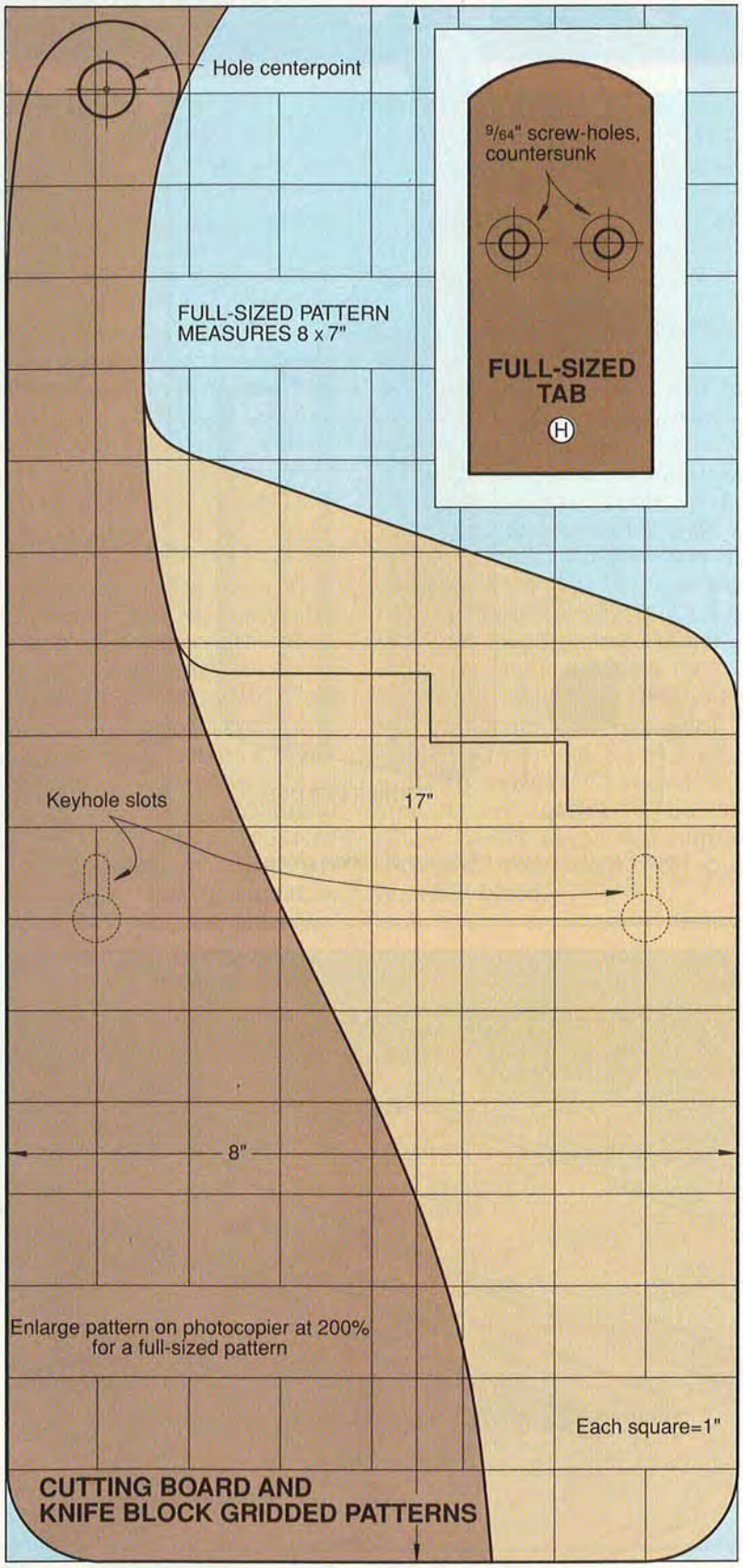
5 Cut a 2 1/2" length of 1/2" walnut dowel stock and glue it in the 1/2" hole in the knife holder.

6 Transfer the full-sized tab pattern (H) to 1/8" walnut stock (we resawed thicker stock to size). Cut the tab to shape and glue it to the edge of the knife holder where shown on the Exploded View drawing. Drill a pair of 3/4" countersunk shank holes through the tab and into the knife holder. Drive the screws. The tab keeps the knife holder aligned with the cutting board when hung later.

7 Rout 1/8" round-overs along all edges of the cutting board including the front and back edge of the 9/16" hole. See the Exploded View drawing for reference.

8 Sand both assemblies smooth. Apply two coats of Behlen's Salad Bowl Finish, rubbing lightly with steel wool between coats.

9 Measure the distance between the keyhole slots in the back face of the knife holder. Then, drive two panhead sheet metal screws into the surface on which you'll hang the knife holder.



Produced by Marlen Kemmet
Project Design: James R. Downing
Illustrations: Kim Downing
Photographs: John Hetherington

IT'S NESSIE!

WHITTLE A FRIENDLY SEA SERPENT

Have you ever seen a real sea serpent? We haven't, either. But, that doesn't mean you can't whittle one of these legendary creatures. Here's how.

Remember this about whittling a sea serpent: you can never be sure that you're finished. The head, tail, and body sections shown will get you started, but you don't have to stop there. For a longer serpent, just whittle some more body sections—enough to fill Loch Ness, if you like. Your creature's ultimate length depends solely on how many spare moments (and odds and ends of wood) you happen to have.

Bandsaw or scrollsaw blanks for the head and body sections from ¾" stock, following our patterns. Whittle the tail from a piece of ⅝" or ¾" square stock long enough to handle comfortably.

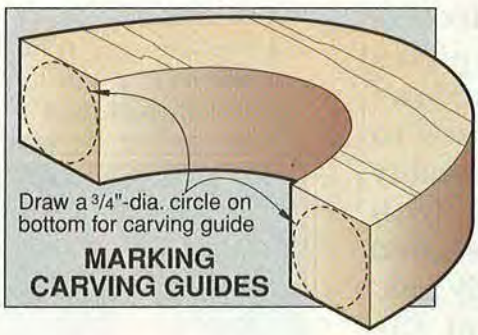
For the best effect, whittle all parts from the same species of wood. Walnut, butternut, cherry, or cedar are good choices, but any carvable wood will work.

After you cut your blanks, draw a ¾"-diameter circle on the bases of each body section and the head. Draw a ½" circle on the tail's base.

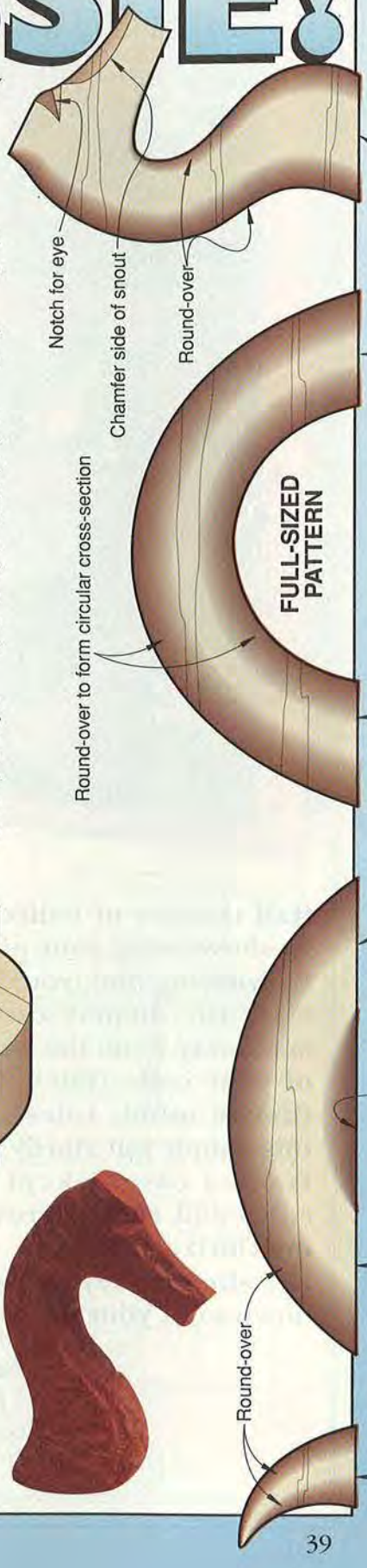
Whittle the corners off to round each body part and the tail. Texture the rounded surfaces as shown in the photo by removing shallow chips with the knife. Bring the tail to a point.

On the head, round the neck, then carve the sides, top, and bottom of the head flat. The head tapers to a 5/16" square section at the end of the snout. Texture the neck and back of the head as you did the body. Cut a slight chamfer on the upper two corners of the snout. Cut two notches where shown for eyes. Add any other details you deem appropriate.

To flatten the bottoms, rub the base of each part over a piece of 150-grit sandpaper held flat on your work surface. Apply a clear finish, then set out your serpent to swim a make-believe sea. Any flat surface will do.



MARKING CARVING GUIDES



Project Design: Roald Tweet
Photograph: John Hetherington
Illustrations: Kim Downing

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SHOW-OFF

Half the fun of collecting is showcasing your pieces for viewing. But, you don't want the display case to take away from the beauty of your collectibles. With that in mind, I designed this simple but sturdy oak-framed case. I kept the stiles and rails narrow to maximize the view, and the shelves adjust up or down to fit your needs.

James R. Downing
Design Editor

Let's start with the back, top, and bottom

1 Cut the cabinet back (A) to the size listed in the Bill of Materials from ¾" oak plywood. Cut the top and bottom (B) to size from ¾"-thick solid-oak stock.

2 Cut or rout ⅜" rabbets ¼" deep along all *front and back* edges of the plywood back panel (A) where shown on the Exploded View drawing and accompanying Rabbet and Groove detail. Cut a pair of the same-sized rabbets across the ends of the top and bottom pieces (B).

3 Cut a ¼" groove ⅜" deep ¼" from the back edge on the inside face of the top and bottom pieces. Dry-fit the pieces (A, B) to check the fit.

4 For hanging the cabinet on the wall later, drill a pair of ⅜16" countersunk shank holes through the top of the back (A) where shown on the Exploded View drawing.

Construct the side frames and door next

1 For the side frame stiles (C) and rails (D), cut four pieces of ¾"-thick stock to 1" wide by 38" long. Cut the oak door frame pieces (E, F) to size plus 1" in length each.

2 Using steps 1 and 2 of the 3-step drawing titled Forming the Door and Side Frame Parts for reference, rout and cut the strips for the side frame stiles and rails (C, D) to shape. Repeat the process using all three steps on the drawing to form the strips for the door stiles and rails (E, F).

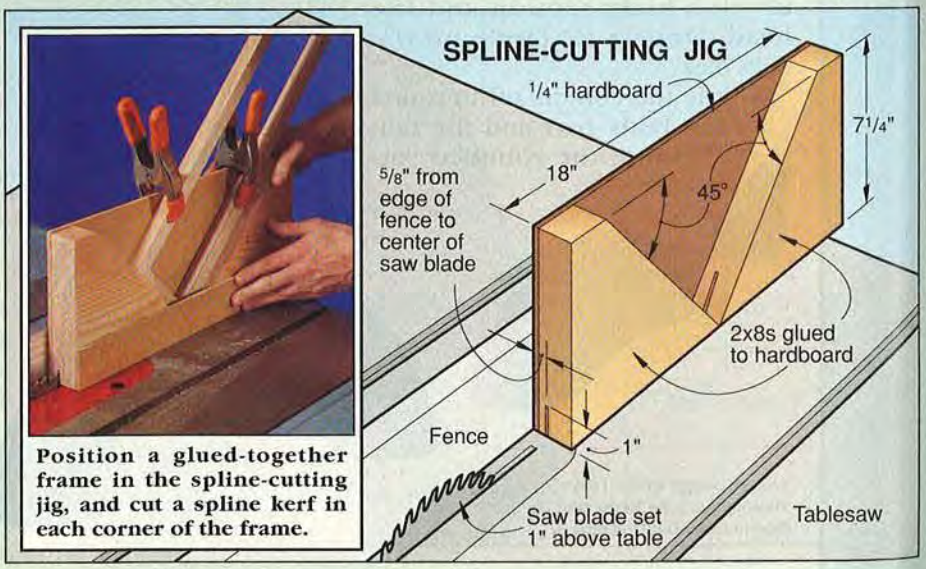
3 Miter-cut the side frame stiles (C) and rails (D) to length.

4 Glue and clamp each set of side frames together, checking for square and flatness. (We found it helpful to use band clamps to hold the mitered ends tight until the glue dried.)

5 Build the Spline-Cutting Jig shown *below*. As shown in the drawing, raise the saw blade 1" above the saw table. To center the spline kerf in the corner edges of the frame, position the fence ⅝" from the center of the blade. (This takes into consideration the ¼" hardboard side of the jig.) As shown in the photo *below left*, place a corner of one side frame in the jig, start the saw, and cut a spline kerf centered in the corner of the frame.

Continued

Position a glued-together frame in the spline-cutting jig, and cut a spline kerf in each corner of the frame.



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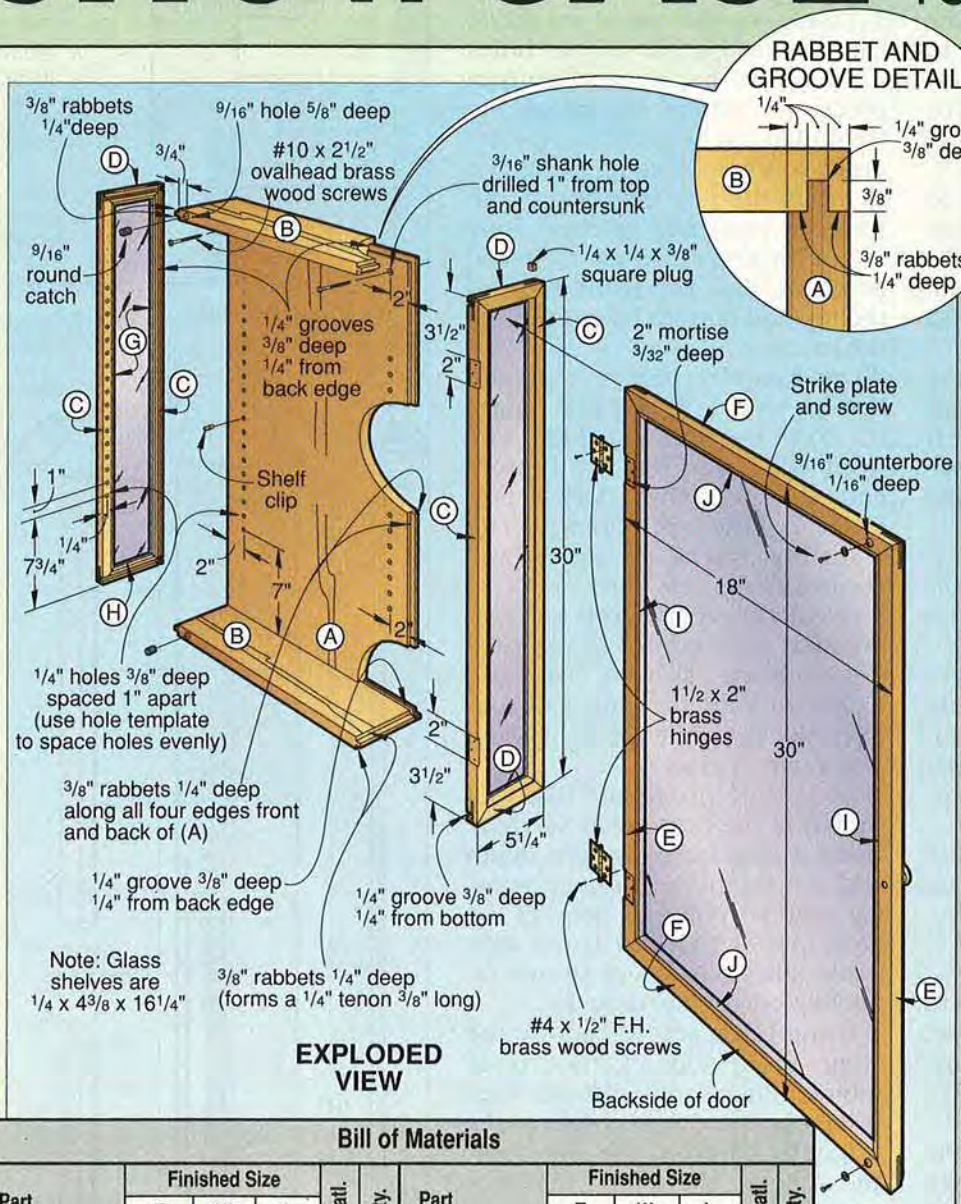
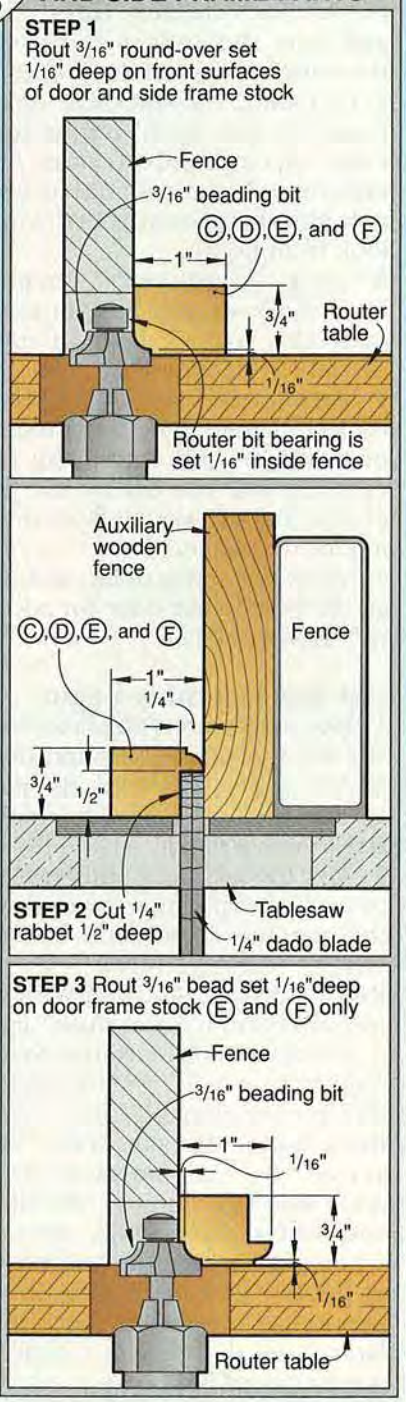
SHOWCASE THE CLEAR CHOICE FOR DISPLAYING YOUR COLLECTIBLES


3/8" rabbets 1/4"deep
9/16" hole 5/8" deep
3/4"
#10 x 2 1/2" ovalhead brass wood screws
3/16" shank hole drilled 1" from top and countersunk
9/16" round catch
1/4" grooves 3/8" deep 1/4" from back edge
1/4 x 1/4 x 3/8" square plug
2" mortise 3/32" deep
Strike plate and screw
9/16" counterbore 1/16" deep
Shelf clip
1"
1/4"
7 3/4"
2"
7"
30"
18"
1/4" holes 3/8" deep spaced 1" apart (use hole template to space holes evenly)
3/8" rabbets 1/4" deep along all four edges front and back of (A)
1 1/2 x 2" brass hinges
1/4" groove 3/8" deep 1/4" from back edge
1/4" groove 3/8" deep 1/4" from bottom
Note: Glass shelves are 1/4 x 4 3/8 x 16 1/4"
3/8" rabbets 1/4" deep (forms a 1/4" tenon 3/8" long)
#4 x 1/2" F.H. brass wood screws
Backside of door
EXPLODED VIEW
RABBET AND GROOVE DETAIL
1/4"
1/4" groove 3/8" deep
3/8"
3/8" rabbets 1/4" deep

FORMING THE DOOR AND SIDE FRAME PARTS



Bill of Materials

Part	Finished Size T	W	L	Matl.	Qty.
BACK, TOP, AND BOTTOM					
A back	¾"	17¼"	29¼"	OP	1
B top & bottom	¾"	5¼"	17¼"	O	2
SIDE FRAMES					
C* stiles	¾"	1"	30"	O	4
D* rails	¾"	1"	5½"	O	4
DOOR					
E* stiles	¾"	1"	30"	O	2
F* rails	¾"	1"	18"	O	2
GLASS STOPS					
G stops	⅜"	¼"	28½"	O	4
H stops	⅜"	¼"	4"	O	4
I stops	⅜"	¼"	28½"	O	2
J stops	⅜"	¼"	16½"	O	2

*Initially cut parts marked with an * oversized. Then, trim to finished size according to the how-to instructions.

Materials Key: OP–oak plywood O–oak

Supplies: Items listed in the Buying Guide plus 2–#10x2½" ovalhead brass wood screws; #4x½" flathead wood screws; #17x½" brads; glass for side frames, door, and shelves; stain; clear finish.

Buying Guide

Hardware kit. One pair of 1½x2" ball-tipped solid-brass hinges (VH2014), 1"-diam. solid brass knob (SBH14), 2–⅝"-diam. magnetic catches and strike plates (55F25), shelf clips (HAF284). Constantine's, 2050 Eastchester Road, Bronx, NY 10461, or call 1-800-223-8087 to order.

(We test-cut scrap stock the same thickness as the side frame first to verify the cut would be centered.) See the Side Frame drawing for reference. Repeat for each corner of each frame.

6 Cut eight pieces of ⅛" oak to 1½" wide by 2½" long. Glue one of the splines in each kerfed corner of both frames. Later, trim and sand the splines flush with the outside edges of the frames.

7 To reduce the thickness of the front stile (C), rip ¼" off the front edge of each side frame. Left untrimmed, the assembled cabinet with the door attached would look front heavy.

8 Cut a ¼" groove ⅜" deep ¼" from the back and bottom edges (not the front edge) of each assembled side frame.

9 Miter-cut the door-frame pieces (E, F) to length, glue them together, and kerf and spline the corners just like you did for the pair of side frames. See the Door drawing for reference.

10 Mark the centerpoint, and drill an 1⁄64" hole in the door for adding the brass knob later.

Let the assembly begin

1 Have single-strength glass cut to size for the side panels and door. At the same time, have as many ¼×4⅜×16¼" glass shelves cut to size as you'll need.

2 Mark the locations and form the two 3⁄32"-deep hinge mortises in the right-hand side frame stile (C) where dimensioned on the Exploded View drawing. With the top and bottom edges flush, lightly clamp the door frame to the right-hand stile (C). Mark lines to transfer the hinge locations from the edge of the side frame stile across the back surface of the door stile (E). Remove the door, and rout and chisel the mortises where marked. Using the hinges as guides, drill pilot holes in the pieces for mounting the hinges later. (See the Buying Guide for our source of hardware.)

3 To mount the round magnetic catches, drill a pair of 9⁄16" holes ⅝" deep in the top and bottom pieces (B) where shown on the Exploded View drawing. (Note: drill a test hole in scrap stock first to verify the hole size and depth for your particular catches. Only 1⁄16" of the end of the catch should protrude past the front edge of the top and bottom pieces.) Install the catches.

4 Dry-clamp (no glue) the top and bottom pieces (B) and side frames (C, D) to the back panel (A). The front edges and top and bottom ends should be flush; trim if necessary. Glue and clamp the assembly. Check for square and remove any excess glue.

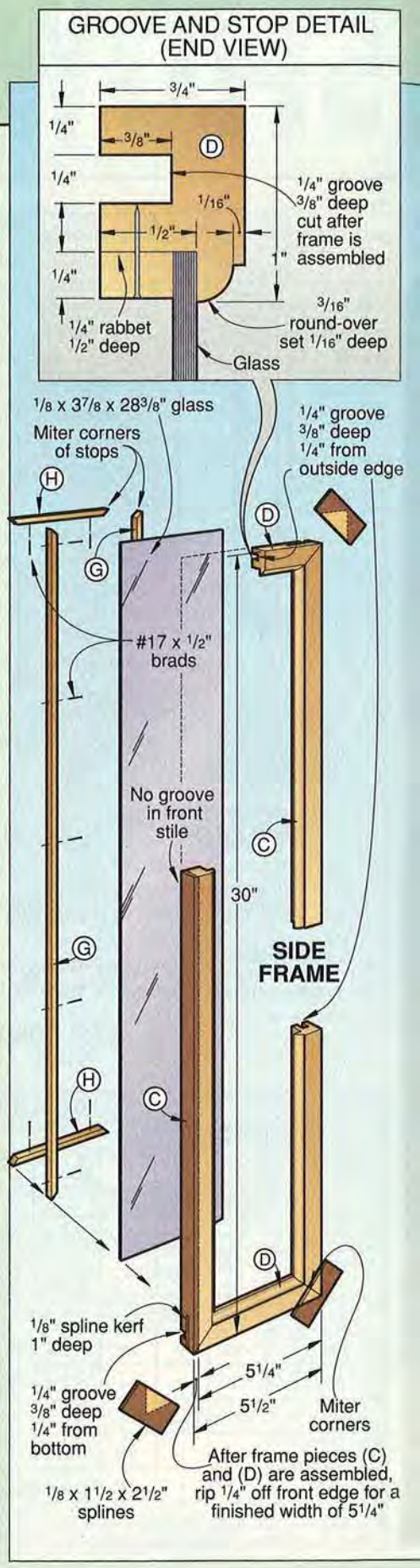
5 Note that you have a ¼×⅜" notch at each corner of the cabinet where shown on the Exploded View drawing. Cut four filler blocks to fit the notches, and glue them in place.

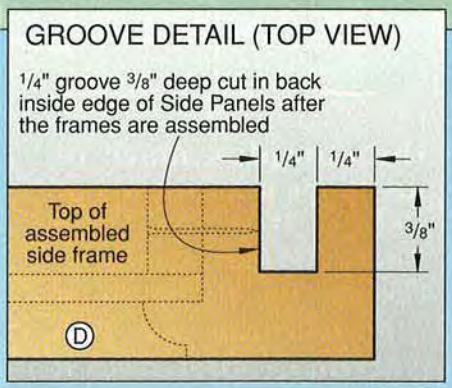
6 Construct a template like that shown in the drawing at *far right*. Using a stop for consistent depth and the template for even spacing, drill ¼" holes ⅜" deep in the back panel (A) and front side frame stiles (C) where shown on the Exploded View drawing.

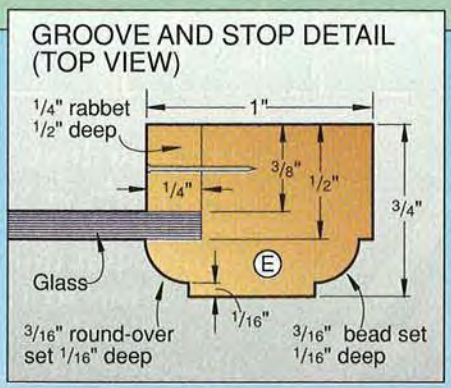
7 Using brass screws, screw the hinges to the door and then to the cabinet. Put a screw through each strike plate, and hold it against the magnetic catch. Close the door, and squeeze the door and screw against the cabinet to indent the strike-plate locations to the door rails. Drill mounting holes and add the strike plates to the door.

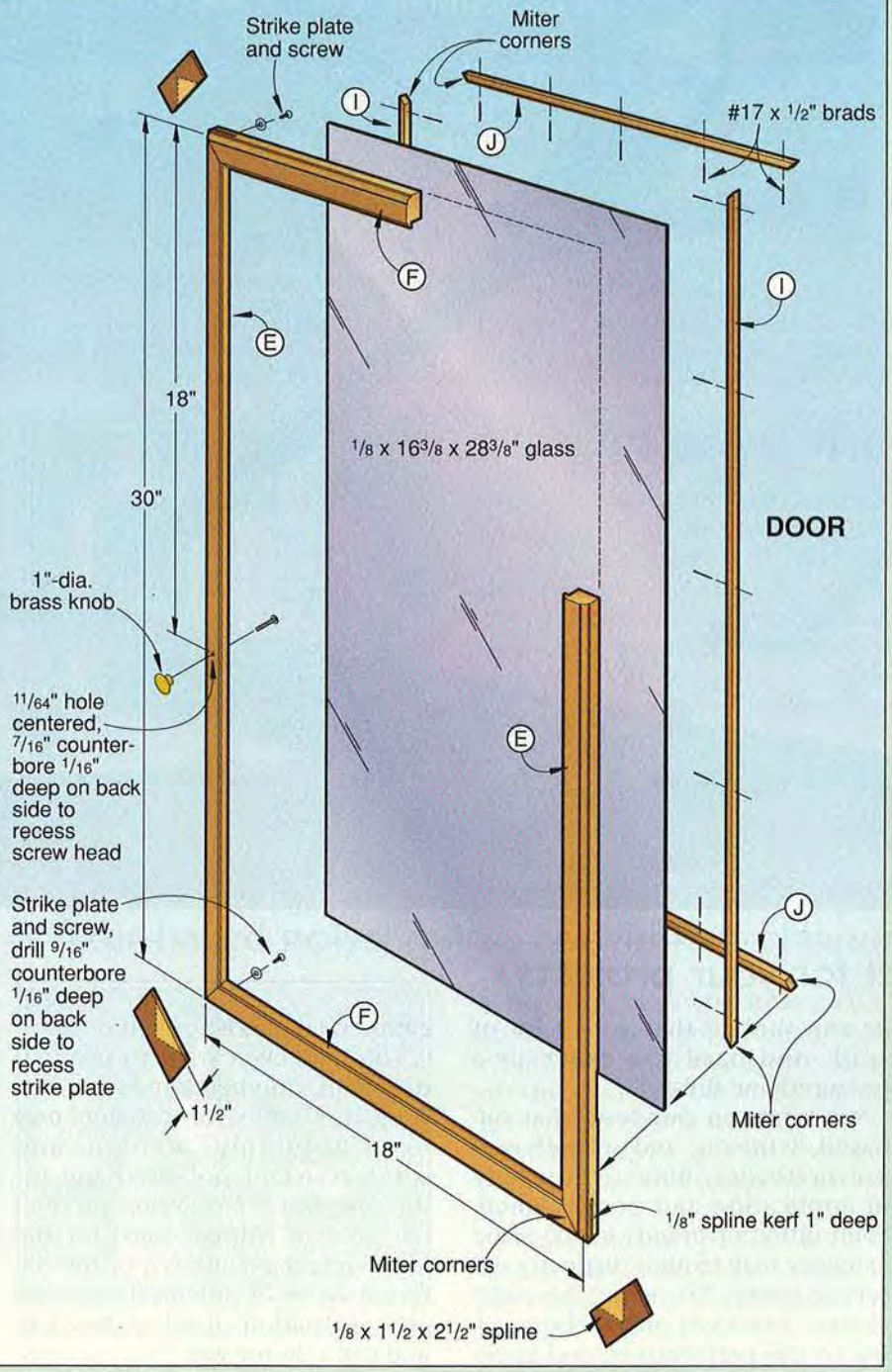
8 From ⅜" stock (we planed thicker stock to this thickness) rip enough ¼"-wide strips for glass stops (G, H, I, J). Miter-cut the stops to length.

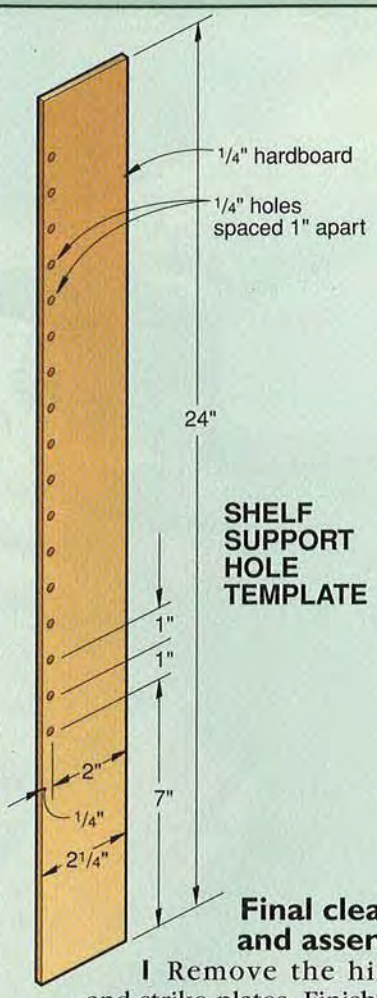
9 Drill pilot holes through the stops for nailing them in place later. To do this, snip the head off a #17×½" brad. Chuck the headless brad into your portable drill. Use the drill and "pilot bit" to drill the pilot holes through the stops.




GROOVE DETAIL (TOP VIEW)
1/4" groove 3/8" deep cut in back inside edge of Side Panels after the frames are assembled
1/4"
1/4"
Top of assembled side frame
3/8"
D







Final cleanup and assembly

1 Remove the hinges and strike plates. Finish-sand the cabinet, the door, and the glass stops. Mask the magnetic catches, then stain the pieces and add a clear finish.

2 Using #17×½" brads, secure the glass in the side frames with the glass stops. Repeat the process to secure the glass panel in the door.

3 Attach the brass knob. Reattach the hinges to secure the door to the cabinet. Then, remove the hinge pin from each hinge to separate the door from the cabinet (it's easier to hang the cabinet without the door). With a helper, level and hang the cabinet.

4 Position the shelf clips and glass shelves. Reattach the strike plates, and add the hinge pins to reconnect the door to the cabinet.

Written by Marlen Kemmet
Photographs: Wm. Hopkins Photography
Illustrations: Kim Downing; Roxanne LeMoine

WOOD® magazine's guide to

THE PERFECT P

Are you lost in the complex maze of claims about various types and brands of polyurethane finishes? If so, join the crowd. But don't worry. *WOOD* magazine has come to the rescue. We figure most woodworkers want to know just two things about a polyurethane: first, does it go on without a lot of problems; and second, does it hold up well? To find out, we put 23 popular brands to the test, and here's what we discovered.

Picking the right product for your projects

A polyurethane finish provides durability, high or low gloss, and brush-on application, making it an excellent choice for the average home woodworker. Some people dislike the "plastic" look of a polyurethane finish, but this thick film also provides superior protection against abrasion and water, alcohol, or food stains. Kitchen and bathroom woodwork and cabinets, dining tables, coffee tables, or any surface that sees a lot of spills and hard use deserves a polyurethane finish.

We found in our tests that oil-based, wipe-on, and water-based polyurethanes differ significantly in application and performance. Even different brands in the same category may exhibit distinctly different traits. To make the right choice, you must match the product to the performance and application characteristics you need.

You may even want to use two different polyurethanes on one project. A table, for instance, may need a durable, alcohol- and water-resistant polyurethane for the top, but a fast-drying product (to prevent runs or sags) for the legs. Here's a rundown of the different types of polyurethanes and an explanation of what they can and can't do for you.

OLYURETHANE

Oil-based polyurethanes: durable and slow to dry

Oil-based polyurethanes, in general, proved to be more rugged than water-based products They also dry slowly, giving you a smooth, level surface.

Oil-based polyurethanes contain complex synthetic resins that help them shrug off abuse better than any finish available to the average woodworker. As an oil-based polyurethane dries, it forms a film by polymerization. This means that the resin molecules form long chains that give these products their durability. As you can see in our chart on *page 47*, nearly all of the oil-based products rated excellent in resistance to alcohol, water, and stains.

In application, most oil-based polyurethanes dry slowly. This allows the film to level out and bubbles to rise to the surface. But slow drying times also demand nearly dust-free conditions. And unless you apply thin coats, oil based products may sag or run on vertical surfaces. Once dry, these products exhibit lots of gloss and depth of film.

Oil-based polyurethanes also give your wood an amber cast. Many woodworkers consider this color change advantageous on brown or reddish woods such as red oak and cherry since it warms up the color of the wood.

Odor and flammability head up the list of disadvantages found in oil-based products. You shouldn't use these products unless your shop has adequate ventilation and a spark-free environment.

You apply wipe-on polys with a rag.

Wipe-on polys: thin coats won't drip or sag

The ease of application and the smoothness of the finished surface we achieved with wipe-on polyurethanes impressed us enough to warrant a special mention. You apply these oil-based products with a soft rag, just like you would apply a Danish-oil or tung-oil finish.

Wipe-on polyurethanes don't build up a thick film, so you may need to apply more than three coats to get much depth. And these multiple coats can get expensive and time-consuming on large projects. But the thin coats eliminate sags and runs on vertical surfaces, and work to your advantage when finishing things like table legs. You also might want to try a wipe-on product for intricately carved pieces where a brush might create drips or fail to reach some surfaces.

Water-based polys: quick, convenient cleanup and a clear film

Water-based polyurethanes dry fast and clean up easily with water.

Many of the drawbacks we cited about oil-based polyurethanes are eliminated with the water-based products. They clean up easily, present no strong odors, pose no fire hazard, and they dry fast, giving dust particles less time to mar the finish.

Water-based products also impart very little color change to the wood. If you want to preserve the light colors of pine, birch, or maple, stick with a water-based formula. Don't panic however, when you open a can. Most of these products start out milky, but dry crystal clear.

Despite their advantages, water-based polyurethanes do present some problems. The water in these products raises the grain on the first coat, and this requires that you sand off the fuzzy fibers. We don't see this as a big problem, however. With many other

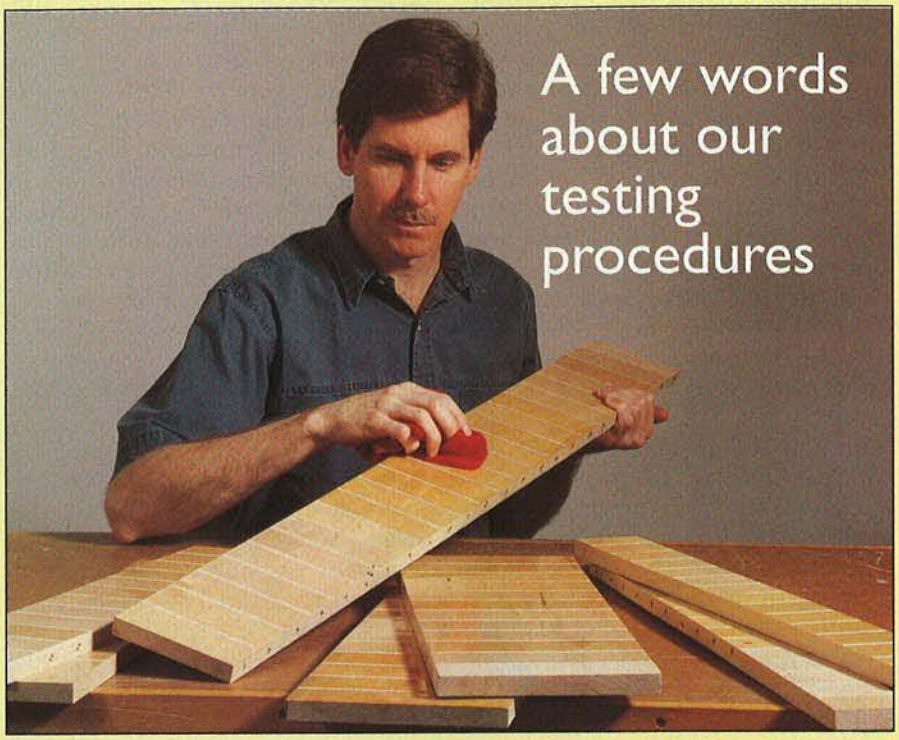
Continued on next page

Our color test *above*, shows the difference between clear water-based polys and the amber tone of oil-based products.

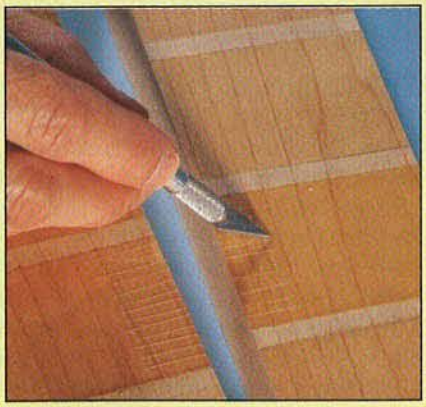
finishes, woodworkers often intentionally raise the grain with a sealer and sand it off in preparation for subsequent coats.

The water-based finishes also showed a greater tendency to bubble during application, and they did not level quite as well as the oil-based products. This we attribute to their quick drying times. When applying water-based polys, use a good nylon- or synthetic-bristle brush with a chisel end and tapered (not flagged) bristles for best results.

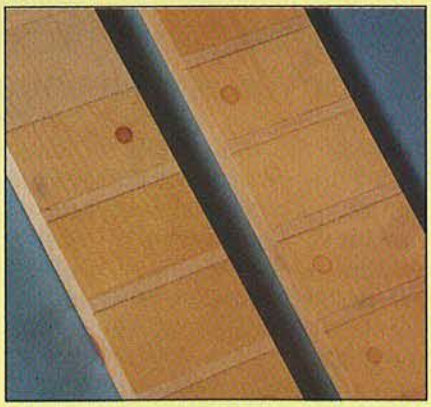
As for durability, our alcohol- and water-resistance tests, in general, created more spotting on the water-based products. This makes them less preferable for horizontal surfaces where water might stand such as dining tables, or those surfaces that get a lot of handling such as stair rails. But check our chart before you decide. A few of the water-based products performed quite well.



We tested each polyurethane on hard maple. This wood's closed pores and light color quickly reveal the good and bad points about any finish.



To test adhesion we cut intersecting lines of various depths on the wood and then tried to pull up the finish with masking tape.



We gave our samples a worst-case scenario—a water-based wood stain that sat on each sample for five minutes—to test resistance to stains.

We evaluated polyurethanes rated for interior use. (One exception, Hydrocote's Polyshield is listed for interior/exterior applications.) Manufacturers formulate the exterior-grade polyurethanes to withstand harsh temperature swings, as well as expansion and contraction of the wood. But to get the flexibility they need to survive outdoors, the exterior products give up some hardness, making them less suitable for interiors.

We also tested only high-gloss products since these produce the hardest film. Satin or flat products contain silicates or other chemicals that cloud the finish. If you want to knock the shine off a glossy film, you can apply a satin-gloss product as the final top coat, or rub out the finish after it's dry with a soft cloth.

Our recommendations

We gave the nod to Varathane Liquid Plastic as the oil-based polyurethane we would use on most woodworking projects. In the water-based category, Varathane scored again with its Elite Diamond Finish. Both applied easily and stood tall against the various torture tests. From the wipe-on polyurethanes, we chose Formby's. Its ease of use and excellent finish quality open up new possibilities for the projects you may have found difficult to finish by brush.

Written by Tom Jackson
Product Testing: Dave Henderson
Photographs: John Hetherington

PICKING OUT AN INTERIOR POLYURETHANE

	Brand	Application: Dry time - dust-free (minutes) (1)	Application: Dry time - to handle (hours) (2)	Application: Sprayable (yes, no) (3)	Application: Leveling (4)	Application: Bubbling (4)	Application: Adhesion (4)	Durability: Water resistance (5) (4)	Durability: Alcohol resistance (6) (4)	Durability: Stain resistance (7) (4)	Durability: Overall performance (8)	Price (9)
OIL-BASED	BEHLEN B603-27336	60-90	24	N	E	E	F	E	E	E	9	$13
	COLONY	60-90	24	N	G	G	E	E	E	E	9	7
	DEFTHANE PLATINUM	60-90	24	Y	E	G	G	E	E	E	9	8
	FABULON	60-90	16	N	G	E	F	E	G	E	8	11
	GLIDDEN WOODMASTER #81	60-90	16	Y	E	G	G	E	E	E	9	8
	MINWAX FAST-DRYING	30-45	3-4	N	F	G	E	E	E	E	8	10
	PARKS	60-90	16	Y	G	G	G	E	E	E	8	5
	RED DEVIL 70	60-90	4-6	Y	G	G	F	E	E	E	8	9
	VARATHANE LIQUID PLASTIC	60-120	6	N	G	E	E	E	E	E	10	13
	WOOD-KOTE	60-90	12	Y	E	G	G	E	E	E	9	13
WATER-BASED	AQUA-ZAR	5-10	24	Y	F	P	E	E	G	E	7	16
	BEHLEN B610-2306	5-10	2-3	Y	G	E	P	E	F	E	7	13
	BEHR CRYSTAL CLEAR, #630	5-10	24	Y	P	E	E	E	P	G	7	13
	CARVER TRIPP #7134	5-10	2-3	Y	G	E	E	E	P	F	7	11
	GENERAL FINISHES POLY-ACRYLIC	15-20	6-8	Y	P	F	G	E	P	P	6	9*
	HYDROCOTE POLYSHIELD	5-10	24	Y	G	E	E	E	P	F	7	21
	HYDROCOTE POLYURETHANE	5-10	24	Y	F	G	E	E	E	P	7	16
	McCLOSKEY HEIRLOOM	5-10	24	N	P	P	E	E	E	E	7	10
	MINWAX POLYCRYLIC	5-10	3-4	N	F	G	E	G	G	F	7	12
	RED DEVIL DURATEX CLEAR	5-10	24	N	G	E	E	E	F	F	8	9
	VARATHANE ELITE DIAMOND FINISH	5-10	24	Y	G	E	E	E	G	E	9	18
WIPE-ON	FORMBY'S POLY FINISH	30-45	12	N	E	E	E	G	E	E	10	4**
	BEHLEN MASTER GEL	30-45	12	N	F	E	E	G	E	G	8	8**

NOTES:

1. Made from observations during our tests, 70° temperature, 50% humidity.
2. Made from observations during our tests, 70° temperature, 50% humidity.
3. According to manufacturer's recommendation.
4. E Excellent; G Good; F Fair; P Poor
5. Drop of water was left on finish for 30 minutes.
6. Drops of ethanol and methanol were placed on finishes for 5 minutes.
7. Drop of water-based wood stain placed on finish for 5 minutes.
8. Based on a 1-10 scale with 10 being the highest possible score.
9. Per quart of finish. Based on current retail and cataolg prices.
   (*) Per pint
   (**) Per 12 ounce bottle

How to get in touch with the manufacturers:

Behr Process Corp.,
3400 W. Segerstrom Ave.
Santa Ana, CA 92704.
Call 800/854-0133

H. Behlen & Bro.,
4715 State Hwy. 30, Amsterdam, NY 12010.
Call 518/843-1380.

Deft, Inc.,
17451 Von Karman Ave., Irvine CA 92714.
Call 800/544-3338.

Fabulon Products,
P.O. Box 1505, Buffalo, NY 14240.
Call 716/873-2770.

The Flecto Co., Inc. (Varathane),
1000 45th St., Oakland, CA 94608.
Call 800/783-6050.

General Finishes,
P.O. Box 51567, New Berlin, WI 53151.
Call 800/783-6050.

The Glidden Co. (Woodmaster),
925 Euclid Ave., Cleveland, OH 44115.
Call 216/344-8609.

The Hydrocote Co. Inc.
East Brunswick, NJ 08816.
Call 908/257-4344.

Minwax Co., Inc.,
50 Chestnut Ridge Rd., Montvale, NJ 07645.
Call 800/228-4722.

Parks Corp. (Carver-Tripp, Parks),
One West St., Fall River, MA 02720.
Call 800/225-8543.

Thompson & Formby,.Inc. (Formby's, Red Devil),
825 Crossover Ln., Memphis, TN 38117.
Call 901/685-7555.

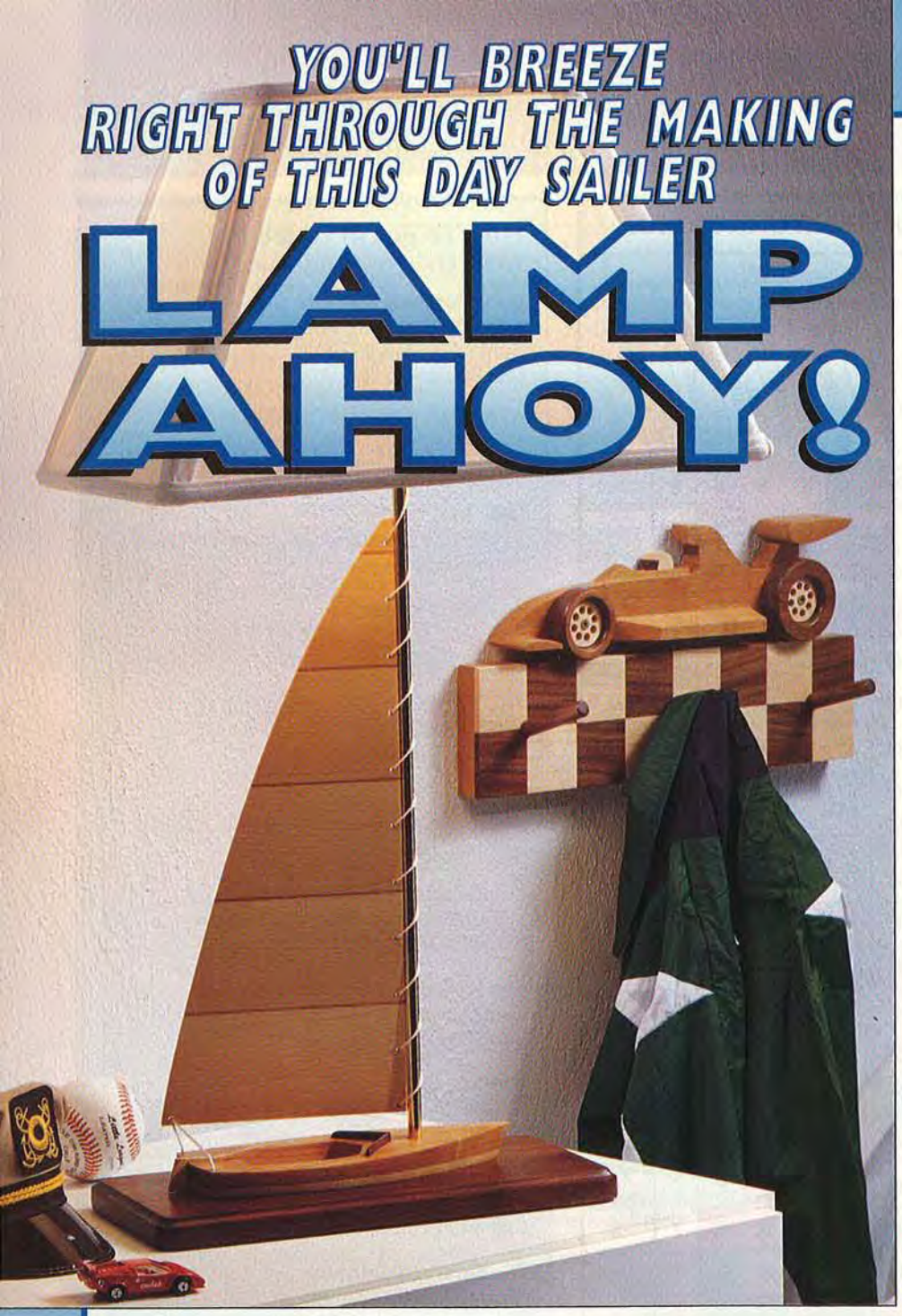
United Gilsonite Laboratories (Aqua Zar),
P.O. Box 70, Scranton, PA 18501.
Call 717/344-1202.

The Valspar Corp. (McCloskey, Colonial),
1191 S. Wheeling Rd., Wheeling, IL 60090.
Call 708/541-9000.

Wood-Kote Products, Inc.,
P.O. Box 17192, Portland, OR 97217.
Call 503/285-8371.

YOU'LL BREEZE RIGHT THROUGH THE MAKING OF THIS DAY SAILER

LAMP AHOY!



Sailors and landlovers alike will take a shine to this whimsical table lamp. It's equally at home in a bedroom, home office, or family room, and you can build one for under $25, including the lamp kit. (By the way, if you'd like to build the race car clothes rack in the photo above, see *page 52*.)

***Note:** This project requires thin stock. You can plane or resaw thicker stock to the thickness listed in the Bill of Materials.*

Let's craft the hull first

1 Cut one piece of ¾" cherry to 4½×10¼" for the hull (A) and a piece of ¼"-thick maple to the same size for the waterline (B).

2 Make a photocopy of the full-sized Hull Top and Side View patterns, and use spray adhesive to adhere the Top View pattern to the 4½×10¼" cherry hull blank.

3 Drill a blade-start hole, tilt your scrollsaw table 15° from vertical, and cut the cockpit opening to shape. Be sure to cut the cockpit on the downhill side of the blade. Sand the cut edges smooth.

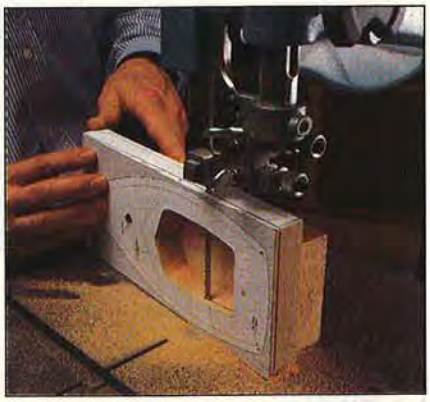
4 With the edges and ends flush, glue and clamp the maple to the bottom side of the cherry. When applying the glue, be careful not to get too much adhesive around the edges of the cockpit area. Remove any squeeze-out from the cockpit opening before it dries.

5 Drill a pair of 3⁄32" mainsheet line holes ¼" deep and a 13⁄32" mast (lamp pipe) hole through the hull lamination (A, B).

6 Apply the Hull Side View pattern to one edge of the maple/cherry hull lamination.

7 For added stability and to form a temporary handle for cutting the hull top surface to shape, cut a piece of 2×4 stock to 10" long. Using carpet tape, adhere the 2×4 to the bottom of the hull lamination, flush with the edge opposite that of the Side View pattern.

8 Following the top line on the Side View pattern, bandsaw the sloping top surface of the lamination (A, B) to shape as shown in the photo *below*. After completing the cut, use carpet tape to adhere the scrap piece back to the top of the hull. Remove the 2×4 stock from the hull lamination.



Apply the full-sized paper patterns to one edge and the top surface. Then, bandsaw the hull lamination to shape.

9 Tilt the bandsaw or scrollsaw table 15° from vertical, and cut the hull sides to shape.

10 With the bandsaw or scrollsaw table positioned perpendicular (90°) from the blade, cut the stern (rear) end of the hull to shape. Remove the top scrap piece, and sand the laminated hull smooth.

Add the base for stability

1 From ¾"-thick walnut stock, cut the base (C) to 6×13". Mark a ½" radius on each corner, and then cut and sand the corners to shape.

2 Using the dimensions on the Exploded View drawing and accompanying Groove detail, locate the mast hole and drill a 1/16" guide hole through the mast centerpoint. On the top surface of the base, bore a ¾" hole ⅛" deep centered over the 1/16" guide hole. Flip the base over, and bore a 1½" hole ⅜" deep centered over the guide hole. Finally, drill a 13/32" hole centered over the guide hole. See the Wiring Diagram for reference.

3 Rout a ¼" cove along the top outside edges of the base.

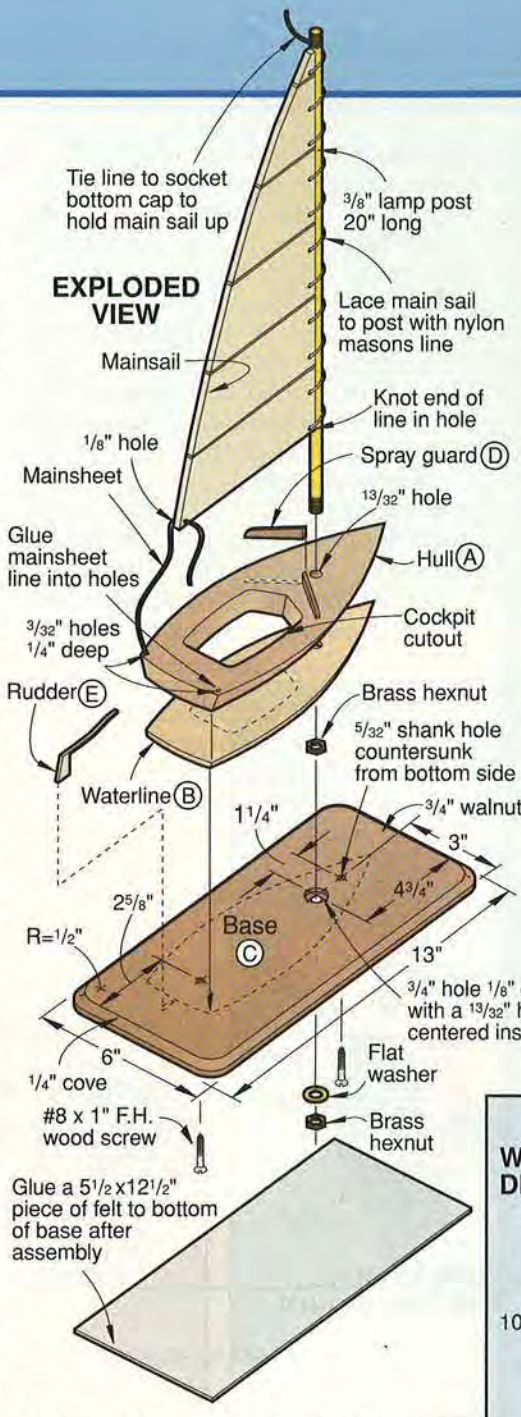
4 Rout a cord groove in the bottom of the base from the 1½" hole to the *back* edge. (We used a ¼" straight bit and free-hand-routed the groove.) See the Groove detail accompanying the Exploded View drawing for reference.

5 Finish-sand the hull lamination and base. Dry-clamp (no glue) the base (C) to the hull lamination, aligning the 13/32" mast holes. Drill a pair of countersunk screw holes through the base and into the bottom side of the hull. Do not fasten the two assemblies together yet.

The spray guards and rudder come next

1 Make two photocopies of the spray guard full-sized pattern, and adhere them to ⅛" walnut. Trim the spray guards (D) to shape. Miter the front ends of the spray guards at a 45° angle (we sanded the front ends to form the miters).

2 Apply the rudder (E) pattern to ⅛" maple, and cut it to shape .



3 Glue the spray guards (D) and rudder (E) to the hull. (We used instant glue to adhere the small pieces in place.)

OK mateys, let's rig the mainsail

1 Cut a 30"-long piece of maple stock to 2 15/16" wide, and joint or plane the piece to ¼" thick for the mainsail blank (F). From ¾"-thick cherry 30" long, rip a ¼"-thick strip from one edge for the batten strip (G).

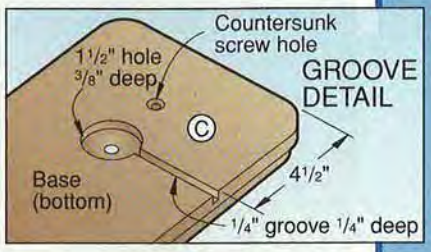
Continued

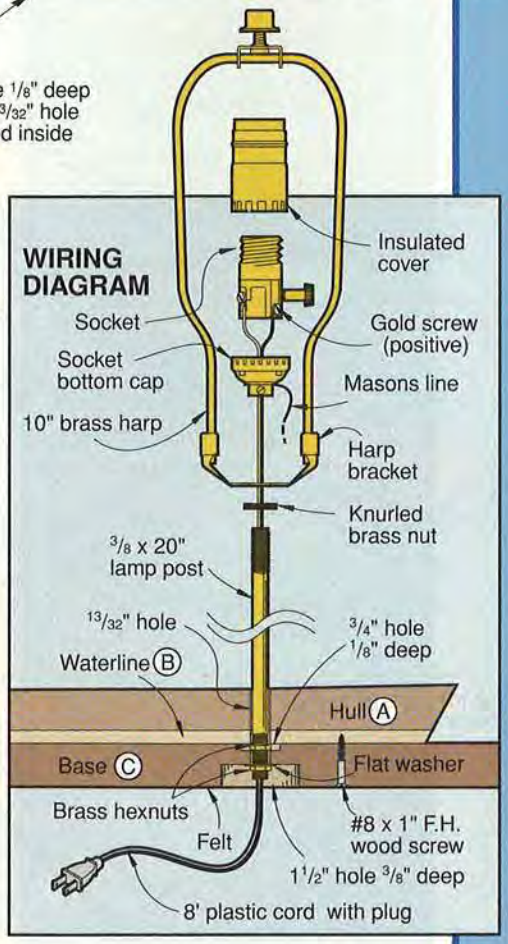
Bill of Materials

Part	Initial Size T	W	L	Matl.	Qty.
BOAT LAMP					
A hull	¾"	4½"	10¼"	C	1
B waterline	¼"	4½"	10¼"	M	1
C base	¾"	6"	13"	W	1
D spray guards	⅛"	¼"	1⅞"	W	2
E rudder	⅛"	1¼"	2⅞"	M	1
F mainsail blank	¼"	2 15/16"	30"	M	1
G batten strip	¼"	¾"	30"	C	1

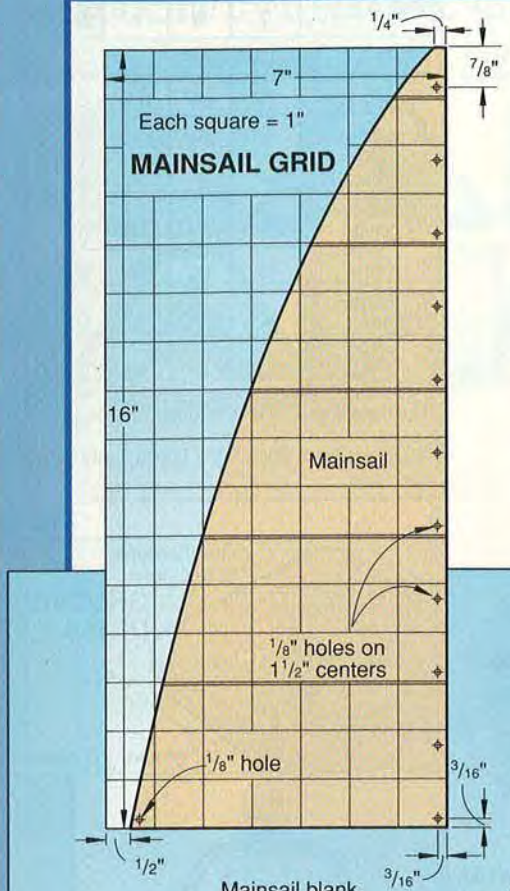
Materials Key: C-cherry, M-maple, W-walnut

Supplies: Items listed in the Buying Guide plus clear finish.





LAMP AHOY!



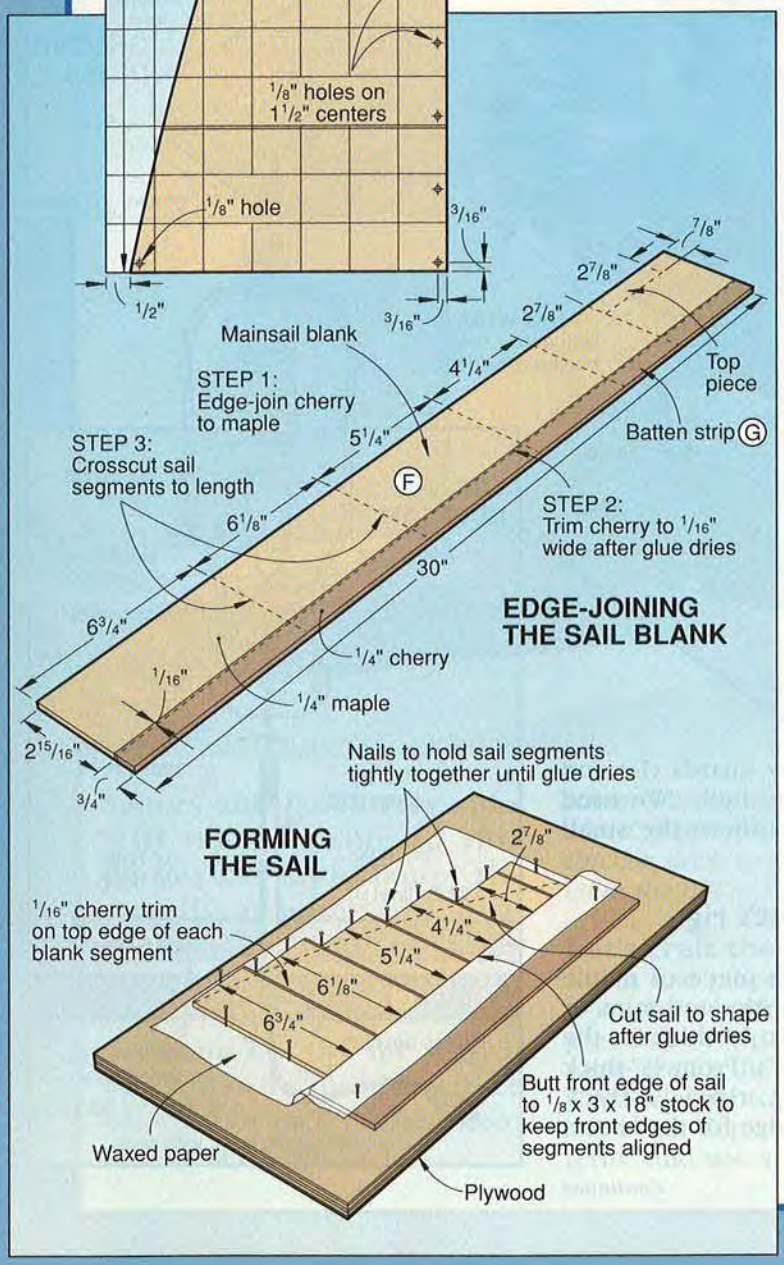
2 Glue the mainsail blank (F) to the cherry batten strip (G) edge-to-edge, with the surfaces flush. See Edge-Joining the Sail Blank drawing for reference.

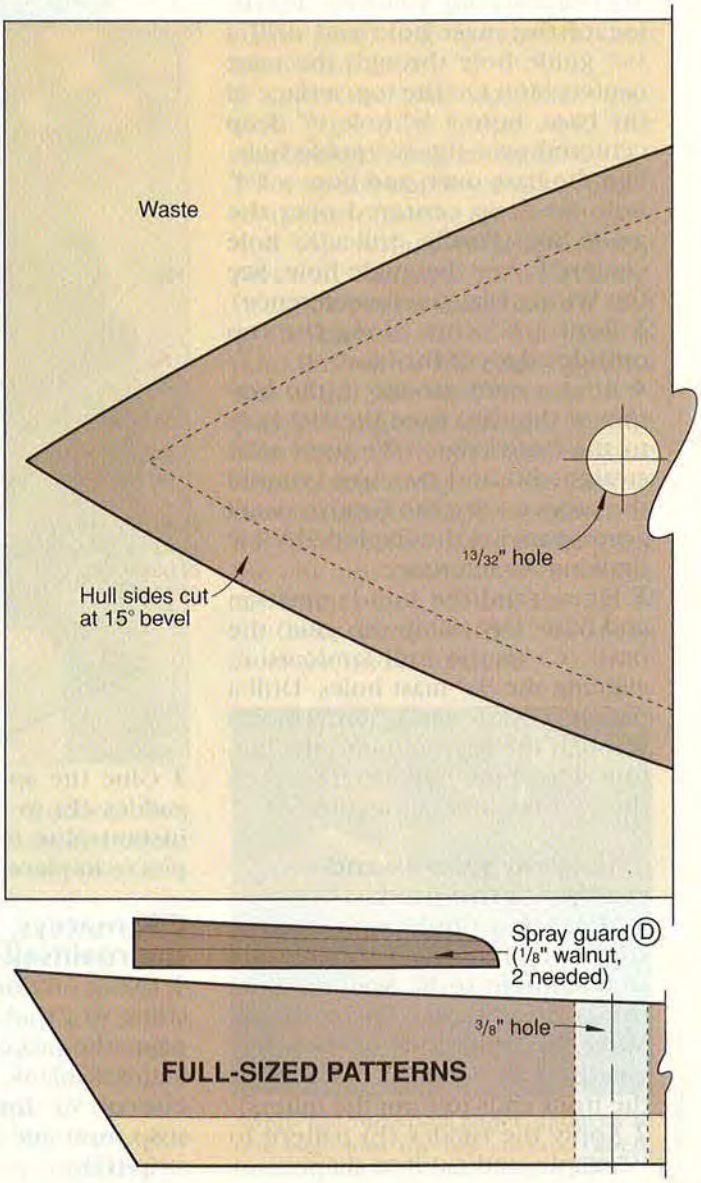
3 Rip the ¾"-wide cherry strip (G) to 1/16" wide. (We found it easier to edge-join a wide piece of cherry to the maple, and then rip the cherry to width rather than trying to cut and edge-join a 1/16"-wide cherry strip initially.)

4 Crosscut the sail segments to the lengths shown on the Edge-Joining the Sail Blank drawing. Cut a sixth piece of maple from the remaining ¼" stock to 7/8 × 2 7/8".

5 As shown in Forming the Sail drawing, glue the segments edge to edge. To do this, first nail a straight piece of stock to a plywood base (you'll use this to keep the front ends of the mainsail segments flush). Place the sail segments on waxed paper, using nails to hold the segments firmly together and against the straight stock. Clamp or nail a wood strip and waxed paper across the top surface to hold the sail segments flat until the glue dries.

6 Later, remove the nails, and sand both surfaces of the sail smooth (we used a belt sander





and then a palm sander to do this). Referring to the Mainsail Grid drawing, lay out the sail's shape and hole centerpoints. (We traced along a thin flexible piece of wood to connect the grid points and form the gracefully curved back edge of the mainsail.) Drill the holes, and cut the mainsail to shape.

Add the finish and put 'er all together

1 Touchup-sand if necessary and apply a couple coats of clear finish to the hull, base, and sail. (We used Deft aerosol lacquer).

2 Secure the mast (lamp post) to the base as shown on the Wiring Diagram. Slide the hull down the mast onto the base, and screw the hull to the base. Make sure the screw heads are slightly recessed to avoid scratching surfaces.

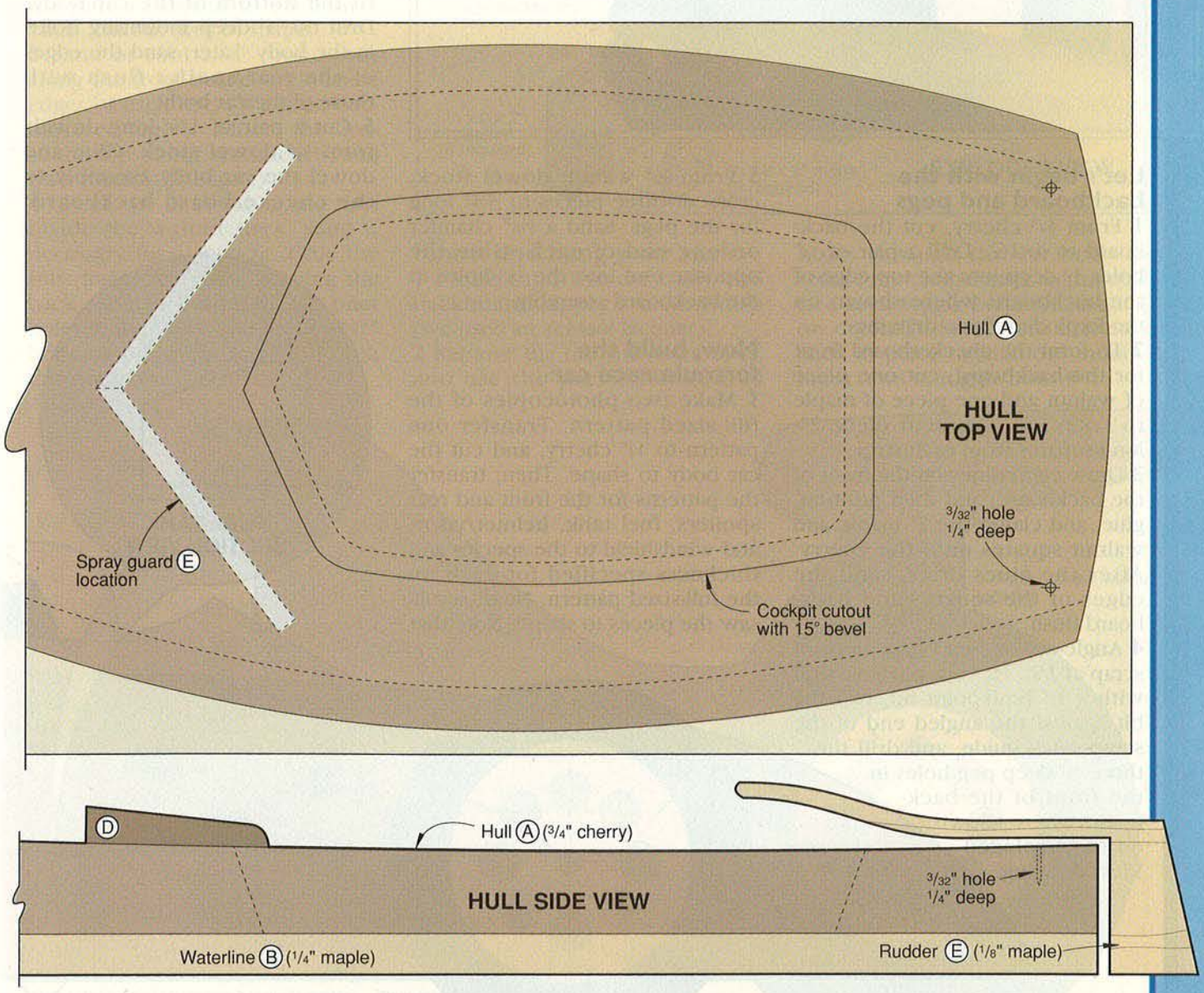
3 Wire the socket and run the wire through the lamp post, hull/base, and access groove. Secure the wire in the groove with instant glue or silicone sealant. Glue felt to the bottom of the base, and trim the excess with an X-acto knife.

4 Use a 40" length of white mason's line to secure the sail to the mast (lamp post). Trim the excess line. Use a 5" length of line to form the mainsheet line from the rear of the sail to the stern.

Buying Guide

Lamp kit: Parts needed to wire the lamp, plus felt and mason's line. Kit no. 3408, $11.95 plus $3.50 shipping. Meisel Hardware Specialties, P.O. Box 70W, Mound, MN 55364-0070. Or call 800/441-9870 to order.

Produced by Marlen Kemmet
Project Design and Illustrations: Jamie Downing
Photographs: Wm. Hopkins Photography



VICTORY-LAP CLOTHES RACK

Let's begin with the backboard and pegs

1 From ¾" cherry, cut the backboard to 4×16". Drill a pair of ¼" holes 1" deep into the top edge of the backboard where shown on the Exploded View drawing.

2 To form the checkerboard front for the backboard, cut one piece of walnut and one piece of maple to ¼×2×18". Crosscut eight 2"-long squares from each strip.

3 Draw centerlines on the front of the backboard, and then position, glue, and clamp the 2" maple and walnut squares onto the cherry. After the glues dries, sand the edges of the squares and backboard flush.

4 Angle-cut one end of a piece of scrap at 15°. Fit your portable drill with a ½" brad-point bit, rest the bit against the angled end of the scrap-stock guide, and drill the three ¾"-deep peg holes in the front of the backboard where shown on the Exploded View drawing.

5 From ½" walnut dowel stock, crosscut three pieces to 3⅜" long for the pegs. Sand a 1/16" chamfer on one end of each. Glue the opposite end into the ½" holes in the backboard assembly.

Now, build the formula race car

1 Make two photocopies of the full-sized pattern. Transfer one pattern to ¾" cherry, and cut the car body to shape. Then, transfer the patterns for the front and rear spoilers, fuel tank, helmet/visor, and windshield to the species and thickness specified for each on the full-sized pattern. Next, scrollsaw the pieces to shape. Note that the fuel tank is bevel-ripped at 18° along the top edge, and bevel-cut 63° across the front end.

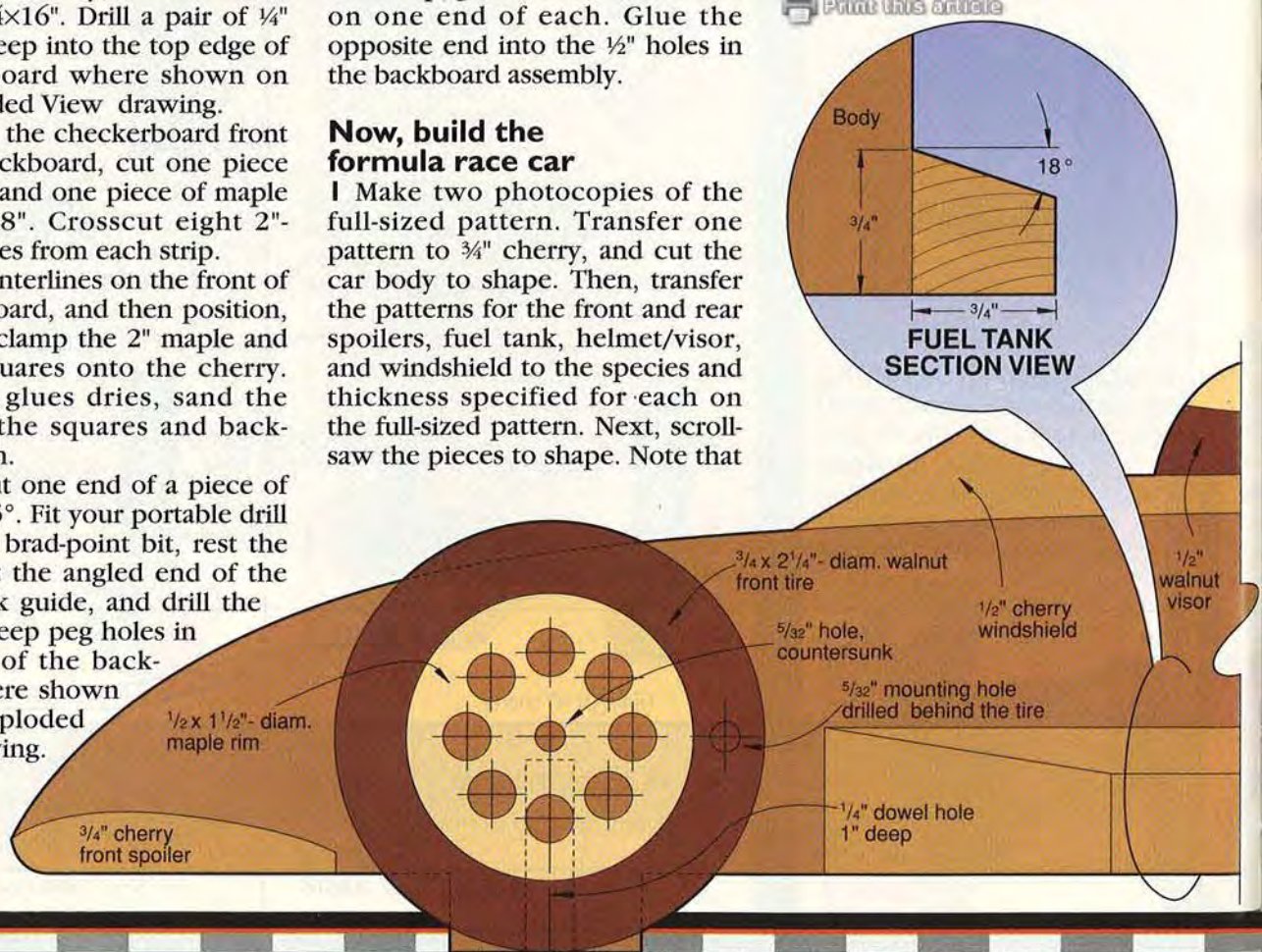
2 For mounting the coat rack to the wall later, drill a pair of 5/32" holes through the car body where shown.

3 Sand the pieces smooth, and glue and clamp the pieces you just cut to the car body.

4 Use dowel centers to transfer the centerpoints from the two ¼" holes in the top of the backboard to the bottom of the car body. Drill the 1"-deep mounting holes in the body. Later, sand the edges of the rear spoiler flush with those of the car body.

5 Cut a pair of 1⅞"-long dowels from ¼" dowel stock. Glue and dowel the car body assembly to the checkerboard backboard.

Print this article



This project is a real winner

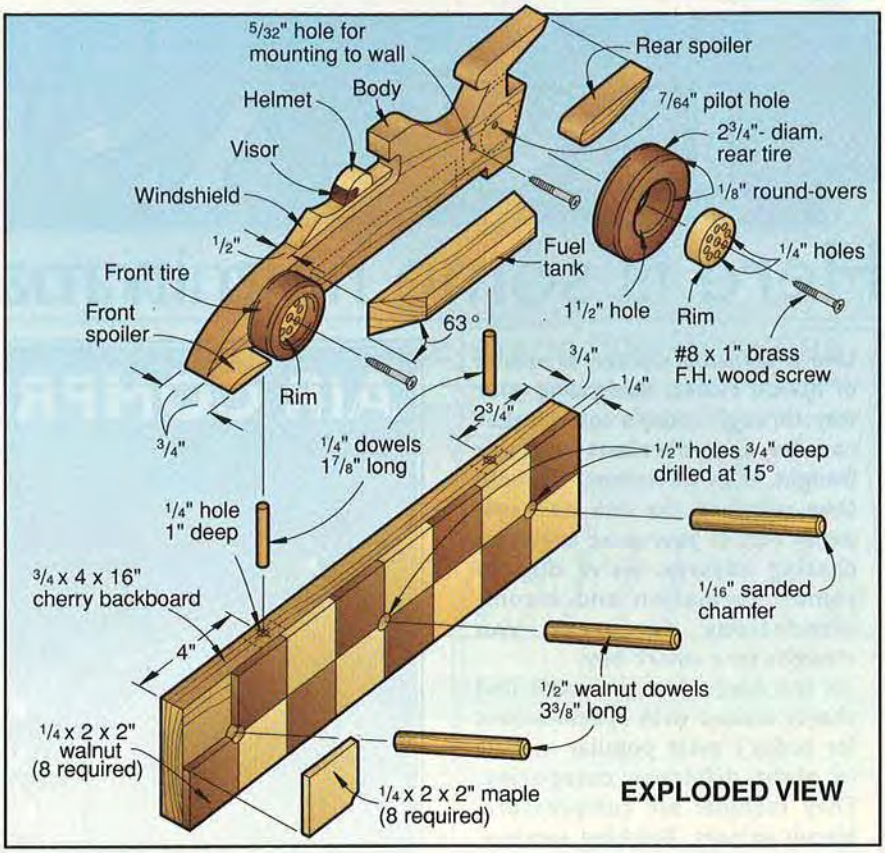
The rims and tires come next

1 To form the rims, transfer the rim pattern to ½" maple, drill the ¼" holes, switch bits, and drill and countersink a 5/32" shank hole through the center of each marked rim. Scrollsaw the rims to shape. (We found it safer to drill and then cut the rims to shape).

2 Next, adhere the full-sized tire patterns to ¾" walnut stock. Use a Forstner bit to bore a 1½"-diameter hole centered in each tire. Then, cut the tires to shape.

3 Sand or rout a ⅛" round-over along the front inside and outside edges of each tire. (We used double-faced tape to adhere the tires to the top of our workbench, and then routed the edges.)

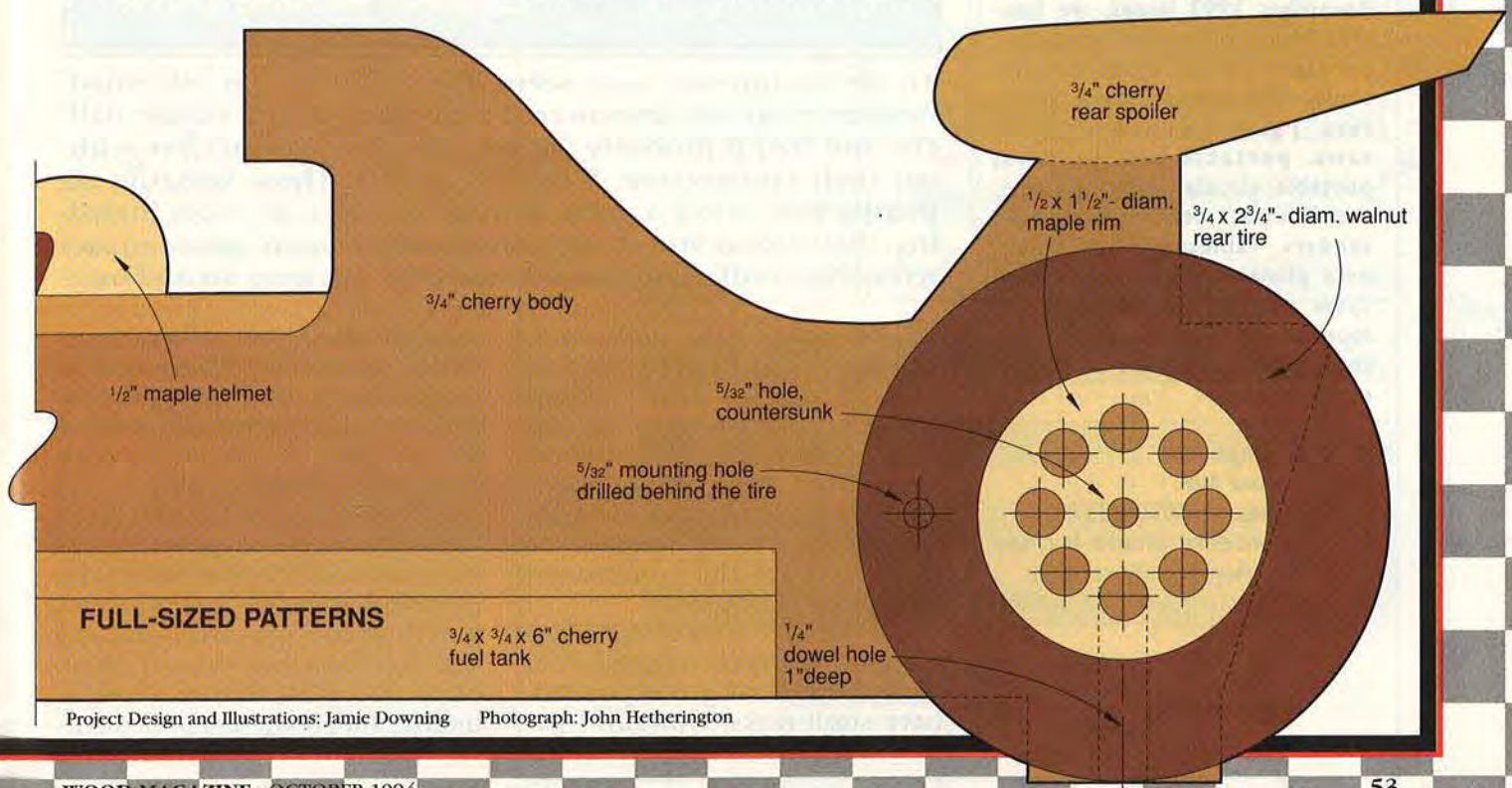
4 Check the fit of the maple rims inside the walnut tires. Sand if necessary for a snug fit. Glue the rims inside the tires, keeping the back surfaces flush. Drill 7/64" pilot holes in the body, and use a #8×1" brass wood screw to fasten each tire/rim to the body.



Finish and hang your rack

1 Finish-sand the car body and backboard. Apply a clear finish (we used an aerosol lacquer).

2 Remove the tire/rim assemblies, and use the previously drilled holes through the car body to secure the clothes rack to the wall (we used toggle bolts for hanging on drywall). Screw the tire/rims back in place to hide the mounting screws or toggle bolts.


3/4" cherry rear spoiler
1/2 x 1 1/2"- diam. maple rim
3/4 x 2 3/4"- diam. walnut rear tire
3/4" cherry body
1/2" maple helmet
5/32" hole, countersunk
5/32" mounting hole drilled behind the tire
FULL-SIZED PATTERNS
3/4 x 3/4 x 6" cherry fuel tank
1/4" dowel hole 1"deep

Project Design and Illustrations: Jamie Downing Photograph: John Hetherington

TOOL BUYER'S TREASURE

Here is some help in mapping out your

Like a treasure hunter in search of buried riches, navigating your way through today's tool market can be a mysterious journey fraught with adventure. To help take some of the risk and suspense out of your next tool-purchasing odyssey, we've dug up some information and recommendations to steer you straight to a smart buy.

In the next 16 pages you'll find charts loaded with specifications for today's most popular models in eight different categories. They include: air compressors, biscuit joiners, finishing sanders, lathes, precision tablesaw fences, radial-arm saws, random-orbit sanders, and shop vacuums.

In case you plan to purchase a product in another category, we've got you covered there, too. In our November 1992 and November 1993 issues, we handled these products: bandsaws, cordless drills, dado-cutting tools, drill presses, dust collectors, jigsaws, jointers, mitersaws, portable belt sanders, portable circular saws, routers, scrollsaws, stationary belt sanders, tablesaws, and thickness planers. If you don't have these articles, we can send you reprints for $1 per article. Just send a stamped, self-addressed envelope to:

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Print this article

An air compressor may seem like a luxury, but ask woodworkers who use air-powered tools such as pneumatic nailers, and they'll probably tell you that they couldn't live without their compressor. Why? It's simple. These versatile air pumps will power a great number of other air tools including: dual-action and straightline sanders, spray guns, impact wrenches, drills, and sandblasters. The list goes on and on.

• ***Know what type you want.*** You can buy single-stage compressors in one of three types: *portable with carrying handle, portable with wheels,* or *stationary*. What type you choose depends on how much air delivery you require, and whether you need to move the compressor from place to place.

The portable-with-carrying-handle models, often referred to as *pancake* or *hotdog* compressors, have small tanks, typically 4 gallons in size, that make them extremely portable. These models are favored by contractors, largely for use with pneumatic nailers and staplers which do not consume large amounts of air.

At the other end of the spectrum, stationary compressors have 60-gallon-or-larger tanks that make them suitable for powering air-gobbling tools such as sanders and sandblasters. You'll most often find these models in automotive, auto-body, and profession-

HUNT

tool-buying decisions

al woodworking shops that make heavy use of air tools.

Most home woodworkers choose a portable machine with wheels. These models offer a compromise between the other two types. Most are too heavy to lift, but you can wheel them around, and they deliver enough air for intermittent use of most air-powered tools.

• Oil-lubricated or oil-less pump. In recent years, more and more manufacturers offer portable air compressors that do not require oil for lubricating the pump components. This makes the compressor less expensive to manufacture, easier to maintain, and lighter in weight. Too, oil-less compressors operate at freezing temperatures that can be hard on an oil-lubricated machine. Nevertheless, we still prefer oil-lubricated compressors because of their quieter operation and greater durability.

• Shop for air delivery, not horsepower. Although manufacturers stress the horsepower ratings of compressors, the truest indicator of a compressor's performance is its air delivery, expressed in cfm's (cubic feet of air per minute). So, be sure to buy a compressor that meets, or exceeds, the cfm requirements of the tools you plan to use.

In our April 1994 test of air compressors, the Quincy 131A20PN stood out as the best buy for most home woodworkers. The Campbell Hausfeld VT6196 (shown *above, left*) also performed well.

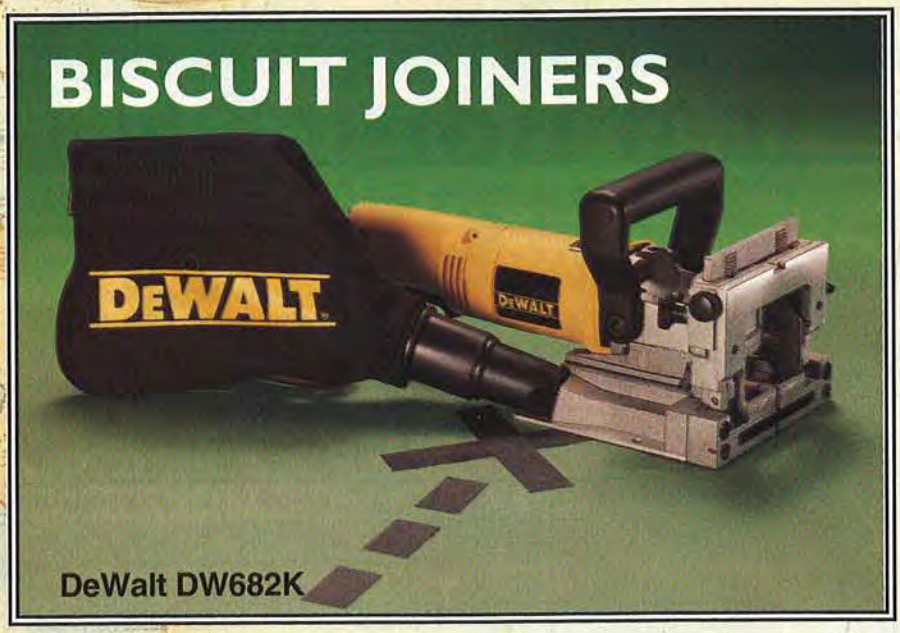
AIRING IT OUT: 26 SINGLE-STAGE COMPRESSORS

MANUFACTURER/ IMPORTER	MODEL	TYPE (1)	CONSTRUCTION (2)	NUMBER OF CYLINDERS	MOTOR: HORSEPOWER (3)	MOTOR: VOLTAGE	TANK CAPACITY (GALLONS)	CFM @ 40 PSI (4)	CFM @ 90 PSI (4)	FILTER TYPE	WARRANTY (YEARS) (5)	COUNTRY OF ASSEMBLY	WEIGHT (POUNDS)	LIST PRICE	SELLING PRICE
AIR AMERICA	SDS100E40	PH	A	1	1	120	4	4.5	3	FOAM	1	U	56	$ 399	$375
	L420	PW	B	2	4	120/240	20	8.1	6.6	FELT	1	U	135	329	299
BOSTITCH	CWH100WT	PH	A	1	1	120	4.5	3.7	7.1	FELT	1	U	49	--	375
	CWH150WT	PH	A	1	1½	120	4.5	6.25	4.8	FELT	1	U	68	--	460
	CWC100	PH	B	1	1	120	4	3.6	2.9	FOAM	1	U	48	--	315
CAMPBELL HAUSFELD	WL5043	PH	A	1	1½	120	4	5.6	4.4	PAPER	1	U	60	399	329
	VT6196	PW	C	2	4	120/240	20	8.1	6.4	FOAM	1	U	156	545	399
	VT5587	S	C	2	5	240	60	11.4	9	FOAM	1	U	290	720	449
CHARGE AIR PRO	1RF312	PW	A	1	3	120/240	12	8.1	6.4	FOAM	1	U	92	269	249
	1R6E60VAD	S	B	2	6	240	60	12.4	10.2	FELT	1	U	238	429	399
EMGLO	AM78-HC4V	PH	B	1	1½	120	4	5.1	4.1	PAPER	1	U	54	514	320
	K15A-8P	PW	C	2	1½	120/240	8	7.2	6.5	PAPER	1	U	140	752	680
JET	DHC15T4	PH	D	1	1½	120	4	5.1	4.3	FOAM	1	U	47	443	376
	EPC15T8	PW	D	2	1½	120/240	8	6.6	5.9	FOAM	1	U	110	736	625
QUINCY	121A20PN	PW	C	2	2	120/240	20	7.1	5.8	FELT	1	U	120	--	365
	131A20PN	PW	C	2	3½	120/240	20	8.1	6.7	FELT	1	U	125	--	390
	151C60VC	S	C	2	5	240	60	11.2	9.6	FELT	1	U	260	--	539
SANBORN	M54D100-4	PH	B	1	1	120	4	4	3	FOAM	1	U	72	--	250
	M07F350-20	PW	A	1	3½	120	20	8.6	6.7	FELT	1	U	126	--	330
	G500BPL60V	S	B	2	5	240	60	12.7	10.6	FELT	1	U	240	--	400
SEARS	15345	PH	A	1	1½	120	4	4.7	3.3	FOAM	*	U	50	--	230
	15292	PW	A	1	4	120/240	25	9	7	FOAM	*	U	130	--	300
	15281	S	A	2	6	240	60	15	11.5	FELT	*	U	220	--	400
SENCO	PC0553	PH	A	1	¾	120	2	2.7	2.2	FOAM	1	U	36	332	269
	PC0319	PH	A	1	1	120	4.5	3.1	2.6	FELT	1	U	55	446	309
	PC0554	PH	A	1	1½	120	4	6.25	4.9	FELT	1	U	65	536	350

NOTES:

1. (PH) Portable with carrying handle
   (PW) Portable with wheels
   (S) Stationary
2. (A) Oil-less.
   (B) Oil-lubricated, one-piece aluminum crankcase and cylinder-block assembly with steel cylinder liner.
   (C) Oil-lubricated, cast-iron construction.
   (D) Oil-lubricated, cast-iron cylinder with aluminum crankcase.
3. Maximum developed horsepower according to manufacturer.
4. Air delivery expressed in cubic feet per minute at a given pressure per square inch according to manufacturer.
5. * One year for consumer use, 90 days for commercial use.

BISCUIT JOINERS



DeWalt DW682K

When it comes to joining two pieces of wood, you'll be hard-pressed to find a method that's faster, or more goof-proof, than biscuit joinery. But, as simple as this process is, a good machine makes it even easier.

•***Take your pick: handheld or stationary.*** Except for the Delta and Shopsmith units, all of the popular biscuit joiners on today's market are handheld versions. These offer the greatest versatility in terms of portability and the types of joints they will handle. The Delta works well in production settings, but we recommend a handheld biscuit joiner as your best all-around choice.

• ***Fences.*** When comparing biscuit joiners, the wheat separates from the chaff when you check out the machines' fences. This all-important feature largely determines how much success and enjoyment you will experience when using any biscuit joiner.

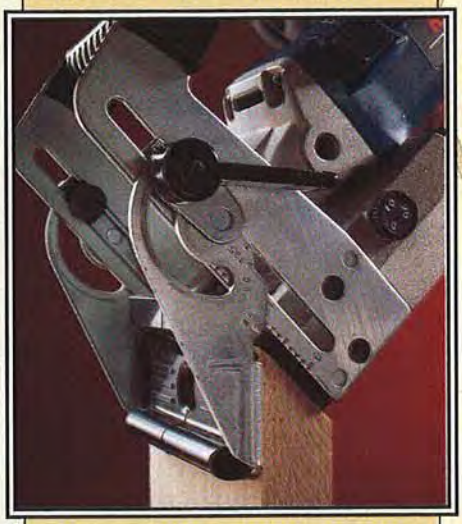
The best units have aluminum or steel fences with well-machined surfaces and components. We found the top-quality fences adjust easily by hand without the aid of wrenches, and automatically align perfectly parallel with the blade when locked down.

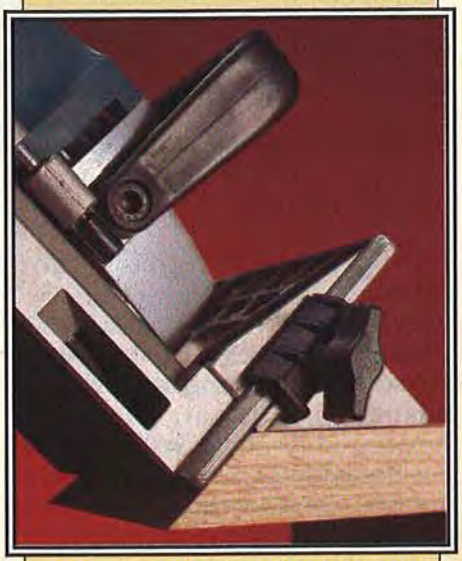
As shown in the photos right, we prefer fences that have the ability to "capture" a mitered edge. This helps ensure accurate cuts at these locations.

•***Special features.*** Keep in mind when considering a biscuit joiner that certain models have qualities that you may find especially helpful, depending on what type of work you do most. For instance, the blade of the Elu model pivots into the workpiece, rather than plunging straight in. Because of this, you can also use the machine for splining and making shallow cuts in tight corners.

As you can see by the "accessories" column in the chart right, the Lamello units have by far the greatest number of optional accessories. Most of these accessories were designed for the professional furniture- and cabinet-making industries, but can come in handy for home woodworkers, too.

Better fences "capture" a mitered edge as shown *below*. This prevents the workpiece or biscuit joiner faceplate from shifting during a cut. Less-expensive units have fences like the one *bottom* that allow the faceplate to shift in relation to the workpiece as you plunge the blade into the workpiece.





In our December 1992 test of biscuit joiners, the DeWalt DW682K got our top grade for best overall value. The Ryobi and Virutex models also proved to be excellent machines at fair prices.

FACTS TO CONSIDER BEFORE YOU TAKE THE PLUNGE: 16 BISCUIT JOINERS

MANUFACTURER	MODEL	TYPE (1)	AMPS	DRIVE TRAIN: NO-LOAD SPEED (RPM)	DRIVE TRAIN: DRIVE TYPE (2)	ADJUSTMENTS: FENCE HEIGHT SCALE (3)	ADJUSTMENTS: FENCE ANGLE (4)	ADJUSTMENTS: NUMBER OF DEPTH STOPS (5)	DUST-COLLECTION PORT (6)	BLADE (NO. OF TEETH)	CORD LENGTH (FEET)	SWITCH TYPE (7)	WARRANTY (YEARS)	ACCESSORIES (8): STANDARD	ACCESSORIES (8): OPTIONAL	COUNTRY OF ASSEMBLY (9)	WEIGHT (POUNDS)	PRICE: LIST	PRICE: SELLING (10)
BOSCH	B1650K	HH	5.8	11,000	G	E/M	A	3	BAG/VAC	4	8	SL	1	B, CC, DB, GA, HA	PB, VH	U	10	$289	$165
DELTA	32-100	ST	10	10,000	B	E/M	A	3	BAG/VAC	6	5½	TO	2	AF, B	DB, ST	T	39.5	340	255
DeWALT	DW682K	HH	6.5	10,000	G	E	A	4	BAG/VAC	6	8	TR	1	CC, DB, HA		U	6.6	429	230
ELU	3380	HH	5	8,500	G	NONE	F	*	VAC*	12	10	SL	1	CC	BL, HA, VH	SW	6.2	542	260
FREUD	JS100	HH	5	10,000	G	E/M	F	6	BAG/VAC	6	8	SL	1	B, CC, DB, O		SP	6.2	333	175
	JS102	HH	5	10,000	G	E/M	A	6	BAG/VAC	6	8	SL	1	B, CC, DB, O		SP	6.8	355	N/A
LAMELLO	TOP 10	HH	6.4	10,000	G*	E	A	6	VAC	6	9	SL	1	B, CC, O	BJ, BL, DP, GA, HA, HB, KD, LB, PB, SA, SB, SS, VH	SW	7	789	560
	STANDARD 10	HH	5.2	10,000	G*	E	F	6	VAC*	6	9	SL	1	B, CC, O		SW	6.6	569	400
	COBRA	HH	2.1	18,000	D	E	F	6	VAC*	2	10	TR	1	B, CC, O		SW	5.5	389	300
PORTER-CABLE	555	HH	5	8,000	B	NONE	F*	3	NONE	6	10	TR	1	B, CC	AF	U	6	320	175
	556	HH	5	8,000	B	NONE	A, F	3	NONE	6	10	TR	1	AF, B, CC	--	U	6	340	185
RYOBI	JM-100K	HH	5.3	9,000	G	E	A	3	BAG/VAC	6	6½	SL	2	B, CC, DB		U	7.3	431	235
SEARS	17501	HH	6	10,000	G	E	A	3	BOX	8	10	TR	1	B, DB		U	6.5	100	100
SHOPSMITH	555485	ST*	MOTOR NOT INCLUDED		D	NONE	#	#	VAC	6	--	SL	1	B, PB	VH	U	13	--	159*
SKIL	1605:02	HH	6	12,000	G	E/M	F	3	BAG/VAC	4	8	SL	1	B, CC, DB, HA	GA, PB, VH	U	6.6	240	145
VIRUTEX	AB-11C	HH	6	10,000	G	E/M	A	3	VAC	6	7½	SL	1	B, CC, O	VH	SP	7.1	266	240

NOTES:

5. (*) Elu machine has a fine-adjustment mechanism with three marks for No. 0, 10, and 20 biscuits.
(#) Set screws require changing for each change in three biscuit sizes.

6. (BAG) Machine comes with a dust bag
(VAC) Machine attaches to a vacuum hose
(*) Requires an accessory attachment for vacuum hose.

7. (SL) Slide (TO) Toggle (TR) Trigger

8. (AF) Adjustable fence
(B) Small supply of biscuits
(BJ) Biscuit-spacing jig
(BL) Specialty blades
(CC) Carrying case
(DB) Dust bag
(DP) Defect-patching attachment
(GA) Glue applicators
(HA) Hose adapter
(HB) Hinge biscuits
(KD) Knock-down aluminum biscuits
(LB) Large biscuits (3" long)
(O) Oil
(PB) Plastic clamping biscuits
(SA) Stationary attachment
(SB) Small biscuits (1½" long) snd special slot cutter
(SS) Solid surface (Corian, Avonite) biscuits
(ST) Stand
(VH) Vacuum hose

9. (J) Japan (SP) Spain (SW) Switzerland (T) Taiwan (U) United States

10. (*) Similar mechanism for use with Shopsmith Mark V sells for $109.

Although the Lamello Top 10 ranked as the best overall performer, we have a hard time justifying its premium price.

Because their fences adjusted with some difficulty, all of the tested units costing less than $200 fell short of our expectations. For this reason, check out the bargain units carefully before making a purchase. If you don't intend to make great use of a biscuit joiner, you may opt to put up with the troublesome fence in exchange for the saved money.

The Freud JS102 came on the market after our review. We'll test it as soon as possible.

FINISHING SANDERS

Bosch model B7150 half-sheet sander (left), Skil model 7390 third-sheet sander (middle), and Ryobi model S605D quarter-sheet sander.

Count the benefits of owning a finishing sander—time savings, convenience, and quality wood preparation—and you may wonder why you don't already own one. It's never too late to buy your first finishing sander, or trade up to a better model. Use the data here to help you pick a winner.

• ***Three sizes to choose from.*** Finishing sanders hold either one-half, one-third, or one-fourth of a 9×11" sheet of sandpaper. Here's a look at each type of machine:

Half-sheet sanders help you smooth large areas, such as tabletops, in as little time as possible. You'll find them less skilled at sanding in tight spots due to their size and weight. Because of sandpaper clamps or dust shrouds, some models do not sand flush against walls or into corners.

Quarter-sheet sanders have become popular items with woodworkers for several reasons. They are inexpensive, light and comfortable to hold, and will handle tight spots as well as surfaces on small to medium-sized projects.

Third-sheet sanders offer a compromise between the two other sanders in this category. If you can't afford both a half- and quarter-sheet sander, take a look at one of these models. However, you won't find professional-grade tools among third-sheet sanders.

• ***Vibration.*** The pad of a finishing sander moves in thousands of tiny orbits per minute. This action helps the sander smooth stock quickly, but it can also induce severe vibration in the machine. To make handling these portable tools as comfortable as possible, better-quality sanders have components that dampen this vibration before it has a chance to reach your hand.

Of course, vibration may not bother you if you only use a sander for short periods of time. But, keep in mind that a machine with lots of vibration may leave your hand numb after only a minute or two. We urge you to try out the finishing sander you want before making the purchase.

• ***Bases and pads*** Finishing sanders have either a foam-rubber, hard-rubber, or felt pad that supports the sandpaper. The foam-rubber pads work best on contoured surfaces, while the hard-rubber pads do a better job on flat surfaces, particularly on soft-grained woods. Why? A sander with a hard pad has less tendency to remove uneven amounts of material from areas of hard and soft grain. Felt pads have become increasingly rare and offer a compromise between the hard and soft varieties. If you prefer to use pressure-sensitive-adhesive (PSA)-backed abrasives, note in the chart that some pads are not compatible with these so-called sticky-backed sandpapers.

The pad attaches to a base with either glue or screws. Since pads wear out over time, we prefer the screwed-on variety when it comes time for a change.

Manufacturers make bases from aluminum, stamped steel, or plastic. If you use a finishing sander a great deal, choose aluminum.

In our April 1993 review of 29 finishing sanders, these models earned high marks:

• Half-sheet sanders: Bosch 1290D, Elu 4015, Milwaukee 6010, and Porter-Cable 505.

• Third-sheet sanders: Ryobi S45.

• Quarter-sheet sanders: Porter-Cable 330, with the DeWalt DW411, Milwaukee 6017, and Sears 11602 also considered good buys.

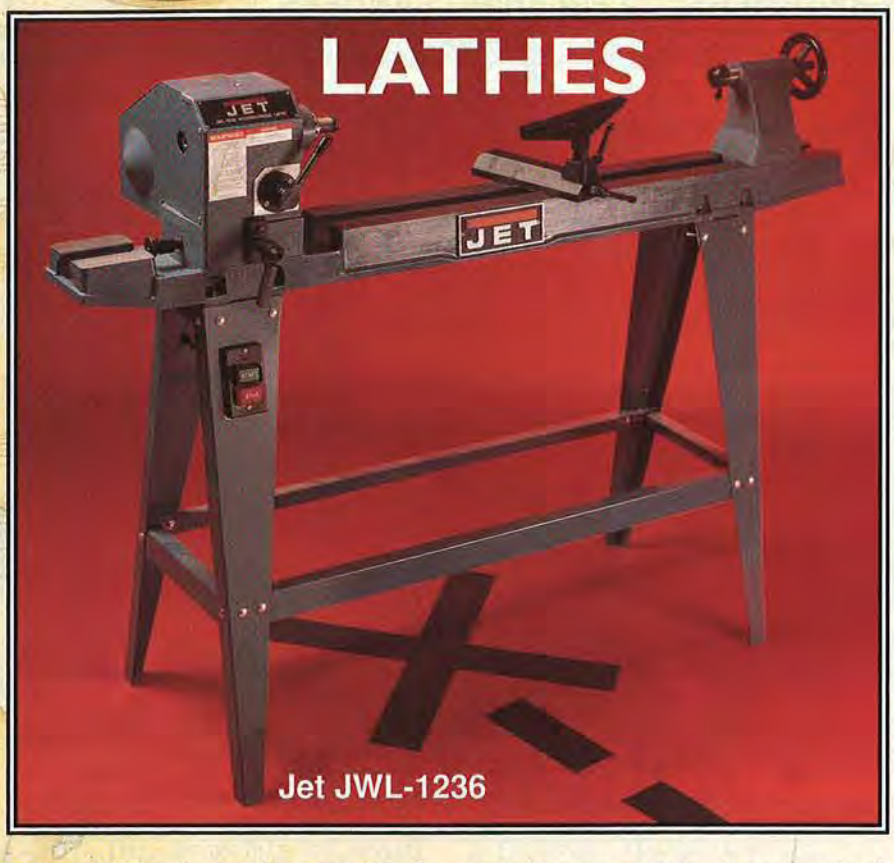
SMOOTHING PERFORMERS: 32 FINISHING SANDERS

	MANUFACTURER/ IMPORTER	MODEL	CLAMP TYPE (1)	TYPE (2)	PAD			ORBITS PER MINUTE	AMPS	DUST COLLECTION (6)	ACCESSORIES (7)		CORD LENGTH	HEIGHT (INCHES)	WEIGHT (POUNDS)	WARRANTY (YEARS)	COUNTRY OF ASSEMBLY (8)	LIST PRICE	SELLING PRICE
					ATTACHMENT (3)	PSA COMPATIBLE (Y, N) (4)	BASE TYPE (5)				STANDARD	OPTIONAL							
1/2-SHEET SANDERS	BOSCH	B7150	L	HR	S	N	A	10,000	2.3	B	B, PP	VA, VH	8'	8	4.4	1	S	$180	$110
		1290D	L	HR	S	N	A	10,000	4.6	B, SH	B, DS	VA, VH	6'6"	8	6.2	1	S	228	130
	ELU	4015	S	FR	S	N	A	10,000	3	NONE			8'	7	7.8	1	M	208	130
	FEIN	MSS641A	L	HR	S	Y	A	14,000	4.8	TP, V	VA	B, VP	13'1"	8	6.2	1	G	605	580
	HITACHI	SV12SD	L	FR	S	N	A	10,000	2.8	B, TP	B	PP, VA, VP	8'	7 1/4	6.2	1	J	258	168
		SV12V	L	FR	S	N	A	4,000-10,000	2.8	B, TP	B	PP, VA, VP	8'	7 1/4	6.2	1	J	288	187
	MAKITA	9045N	L	FR	G	N	A	10,000	4	B, SH	B, DS		8'9"	6 1/4	6.2	1	J	288	130
	MILWAUKEE	6010	S	FR	S	Y	A	12,000	5	B, SH		B, CC, DS, VP	7'10"	7	7	LIFETIME	U	224	135
	PORTER-CABLE	505	S	FR	S	Y	A	10,000	2.3	SH, V		DS, VH	7'2"	6 3/4	7.4	1	U	230	120
	SEARS	11616	L	HR	G	Y	S	4,000	4	B, SH	B, DS	CC	10'	7 3/8	5	1	U	78	78
1/3-SHEET SANDERS	BLACK & DECKER	7454	W	FR	G	N	P	6,500-11,000	1.2	TP, V	PP		6'2"	5 3/4	2.1	1	E	100	55
	BOSCH	B7100	W	HR	S	N	A	10,000	1.6	B, TP	B, PP, VA	VH	8'	6 3/4	3.8	1	S	121	73
	MAKITA	9035	L	FR	G	N	S	10,000	1.7	NONE			6'10"	5 3/4	3	1	J	129	75
		9036	S	FR	S	N	A	12,000	2.2	TP, V	B	PP, VH	6'10"	7	3.1	1	J	138	80
	RYOBI	S45	L	HR	G	N	S	10,000	2.1	DB, TP	PP	VA	6'	6 3/4	4.4	2	U	118	70
	SEARS	11613	L	HR	G	Y	S	4,000	3	B, SH	B	CC	6'	7	4	1	U	60	60
	SKIL	7390	W	FR	S	N	P	10,000	2	TP, B	PP	VA, VH	8'	6 1/2	3.5	2	N	88	49
		7582	S	F	G	N	A	10,000	2	NONE		CC	7'10"	7	4.8	1	U	130	87
1/4-SHEET SANDERS	BLACK & DECKER	7441	W	F	G	N	P	15,000	1.6	NONE			6'3"	5 1/4	2	1	U	59	35
	BOSCH	1289D	S	HR	S	N	A	10,000	1.35	B, TP	B, PP	VA, VH	6'6"	5 1/4	3	1	S	107	64
	DeWALT	DW411	W	FR	S	N	P	13,500	1.7	B, TP	B, PP	VA, VP	8'	5 1/4	2.6	1	U	87	60
	HITACHI	SV12SA	W	HR	S	N	A	12,000	1.7	NONE		VP	8'4"	5 1/2	2.8	1	J	100	65
	MAKITA	BO4550	L	FR	G	N	P	14,000	1.6	B, TP, V	B, PP	CC, VA, VH, VP	6'	5	2.1	1	J	98	55
		BO4551	H	--	--	N	P	14,000	1.6	B, TP, V	B	CC, VA, VH, VP	6'	5 3/8	2.1	1	U	98	55
	MILWAUKEE	6017	L	FR	G	N	P	13,000	1.8	B, TP	B, PP		9'	5 1/4	2.8	LIFETIME	T	99	60
	PORTER-CABLE	330	L	FR	S	Y	A	14,000	1.2	NONE		VP	7'	7 1/2	4	1	U	110	60
	RYOBI	S605	W	FR	G	N	S	14,000	2	NONE			6'6"	5 1/2	2.6	2	U	80	39
		S605D	W	FR	G	N	S	14,000	2	DB, TB	DB, PP	DB	6'6"	5 1/2	2.6	2	U	90	45
	SEARS	11602	L	HR	G	Y	A	14,000	2	NONE	PAPER		8'4"	5	2.6	1	U	38	38
		27701	W	F	G	Y	P	14,000	2	B, TP	B, PP, PAPER		10'	5 1/2	2.9	1	U	50	50
	SKIL	7275	L	FR	G	N	P	13,000	1.7	B, TP	PP, VA	VH	8'	5 1/2	2.7	2	U	51	32
		7576	L	FR	S	Y	P	13,000	1.7	B, TP	B, PP		8'	5 3/4	2.8	1	U	92	55

NOTES:

1. (H) Hook and loop
   (L) Lever-assisted spring clamps
   (S) Spring clamps
   (W) Wire clamps
2. (F) Felt
   (FR) Foam rubber
   (HR) Hard rubber
3. (G) Glued to base
   (S) Screwed to base
4. Compatibility of pad with pressure-sensitive-adhesive-backed abrasives. Yes or No.
5. (A) Aluminum
   (P) Plastic
   (S) Stamped steel
6. (B) Bag
   (DB) Dust box
   (SH) Shroud
   (TP) Through the pad
   (V) Vacuum
7. (B) Bag
   (CC) Carrying case
   (DB) Disposable dust bags
   (DS) Dust shroud
   (PP) Punching plate for sandpaper
   (VA) Vacuum attachment
   (VH) Vacuum hose
   (VP) Various pads
8. (E) England
   (G) Germany
   (J) Japan
   (M) Mexico
   (N) Netherlands
   (S) Switzerland
   (T) Taiwan
   (U) United States

TOOL BUYER'S TREASURE



Few tools can make you feel like an accomplished woodworker as quickly as a lathe can. This machine helps you impart graceful symmetry to any project, even if it's your first attempt at a bowl, spindle, or other turned object.

•***A size and price for every woodworker.*** As you can see in the chart, lathes vary greatly in price and weight. The heavier, and more expensive models (over $1,000), work better with large, out-of-round workpieces that vibrate intensely until you rough-turn them. These larger machines also have bearings, motors, headstocks, tailstocks, spindles, and other components that can take the punishment dished out by heavy blocks of wood.

If you plan to work with modestly sized workpieces, say bowls up to 12" in diameter and 4" thick, or spindles up to 3" in diameter, look to lathes priced between $400 and $1,000. In fact, few home woodworkers require a lathe costing more than $600.

Lathes priced under $400 make good sense if you plan to turn smaller objects such as candlesticks, rolling pins, thin spindles, or bowls under 10" in diameter and 3" thick. And, if you plan to only turn lilliputian-sized objects, take a good look at so-called "miniature" lathes such as those made by Carba-Tec, Klein, or Record. These fun and friendly lathes take up little space, and help give you a touch of finesse with delicate workpieces.

•***Tool-rest truths.*** Although this component may seem like a small and simple part, it has a big effect on your satisfaction level. That's because the tool rest helps you guide and steady the turning tool.

A good-quality tool rest will stay rigid when locked into position. And, it should have convenient, large, hand-operated adjustment levers. It should have a smooth finger groove, and its top must be milled straight and smooth so your tool glides along it.

•***Speed changing.*** You'll typically change speeds at least two or three times while completing a project, so pay attention to how various machines accommodate this task. Most lathes require you to change belts, but if you want to complete tasks as quickly as possible, you're better off with a machine that changes speeds with a turn of a lever. Also, look for a lathe with a low-end speed no faster than 600 rpm. Turning out-of-round pieces at higher speeds can be a frightening experience.

•***Accessories.*** Lathe manufacturers supply so many accessories that it just wasn't possible to list all of them in the chart *right*. Just remember to carefully consider what accessories come standard when comparing machines.

In our October 1993 review of 10 lathes priced under $600, the Delta 46-700 emerged as a clear winner. We liked its quality construction, well-designed controls and lock-downs, handy variable-speed lever, and the ability of its headstock to swivel 90° for convenient outboard turning. However, if you're looking primarily for a lathe to do outboard turning, the Jet JWL-1236, shown above, works even better in this regard because the head swivels with much less effort. Although the Jet costs more than the Delta, it comes with a stand and the tool-rest base extension necessary for many outboard-turning projects.

HERE'S THE SPIN ON 29 LATHES

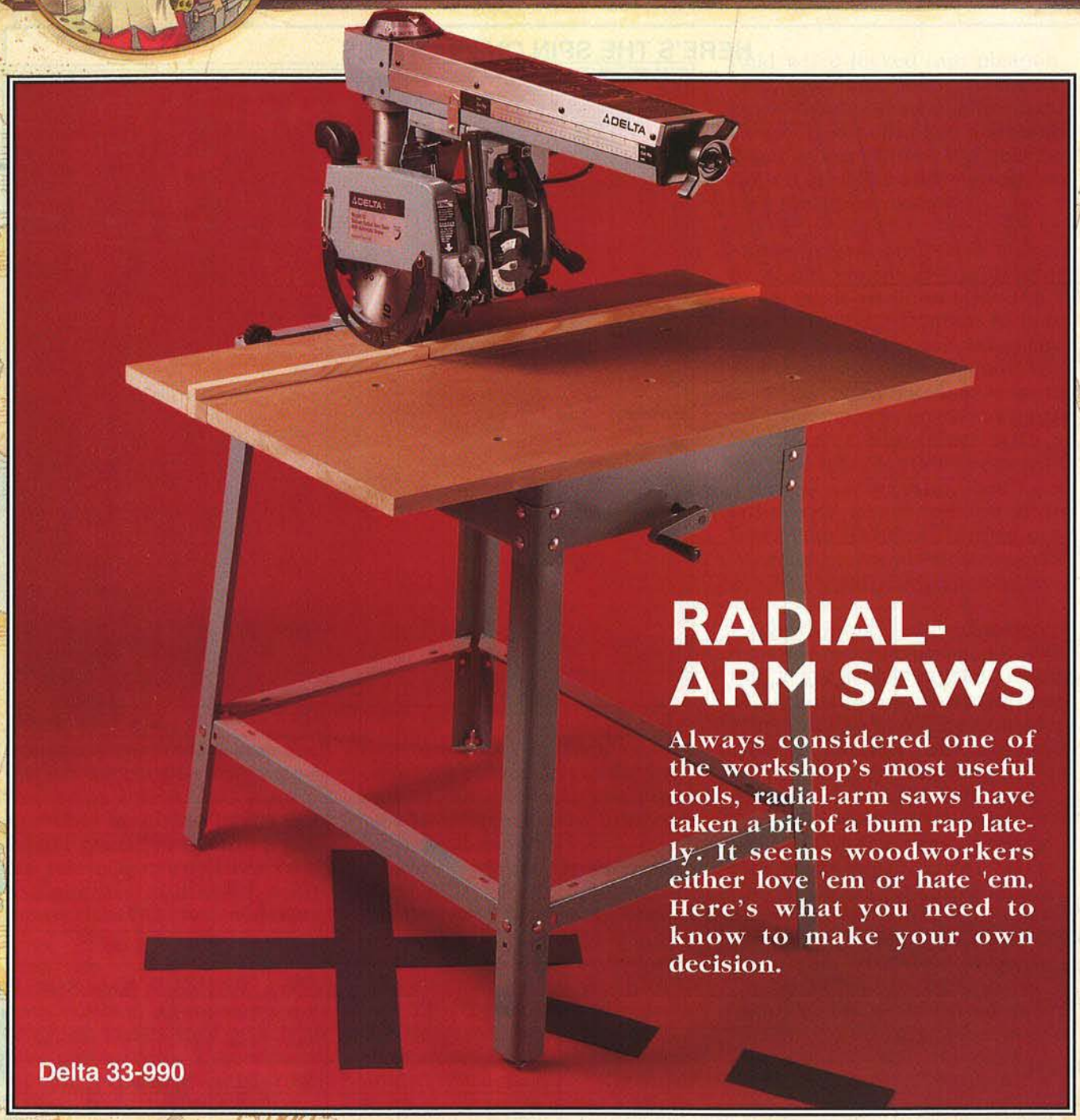
MANUFACTURER/ IMPORTER	MODEL	CAPACITY (INCHES)						CONSTRUCTION MATERIALS (2)		SPEED CONTROL (3)				WARRANTY (5)					
		BETWEEN CENTERS	SWING OVER BED	SWING OVER TOOL REST	PIVOTING HEAD (Y, N)	SPINDLE THREAD (1)	HEADSTOCK MORSE TAPER NUMBER	BED	HEAD/TAIL	TYPE	RANGE (RPM)	HORSEPOWER (4)	INDEX (Y, N)	LATHE	MOTOR	WEIGHT WITH MOTOR (POUNDS)	COUNTRY OF ASSEMBLY (6)	SELLING PRICE WITHOUT MOTOR (7)	SELLING PRICE WITH MOTOR AND SWITCH (7)
AMT	4370	36	12	12	N/A	3/4-16	N/A	CI	CI	BELT/ PULLEY	275-3065	1/2	Y	10 years	1 year	125	U	$289	$ 359*
	373	41	12	12	N/A	3/4-16	N/A	TT	CI	BELT/ PULLEY	862-3450	1/2	N	10 years	1 year	57	U	129	199*
BRIDGEWOOD	BW-1240	37	12	9 3/4	N	3/4-16	1	ST	CI	BELT/ PULLEY	575-3580	3/4	Y	1 year	1 year	80	T	--	219*
	BW-1539	39	15	12 1/2	N	1-8	2	TT	CI	BELT/ PULLEY	660-3000	1	Y	1 year	1 year	230	T	--	795*
CARBA-TEC	CML	12 1/2	5	4	N	3/4-16	1	CI	CI	BELT/ PULLEY	860-3475	1/4	N	1 year	1 year	40	T	240	305*
DELTA	46-700/01*	36	12	8 1/4	Y	1-8	2	CI	CI*/CI	VARIABLE SPEED	500-2000	3/4	N	2 years	2 years	125/ 148	U	--	518/562***
	46-204(M)	39	12	8 3/8	N	1-8	2	CI	CI/CI	BELT/ PULLEY	915, 1380, 2150, 3260	3/4	Y	2 years	2 years	170	U	--	1,395***
	46-611	38	12	8 1/4	N	1-8	2	CI	CI/CI	VARIABLE SPEED	340-3200	1	Y	2 years	2 years	581	U	--	3,115***
ENLON	WL01	40	14	14	N	3/4-10	N/A	TT	FS/CI	BELT/ PULLEY	980-3010	1/2	N	90 days	1 year	70	T	121	150*
	WL05	40	14	14	N	1 1/8-12	N/A	FS	CI/CI	BELT/ PULLEY	860-3096	1/2	N	90 days	1 year	180	T	361	395*
	WL10	40	17	14	N	1-12	2	CI	CI/CI	VARIABLE SPEED	810-3690	3/4	Y	90 days	1 year	255	T	561	620*
GENERAL	160-1	38	12	8 1/4	N	1-8	2	CI	CI	BELT/ PULLEY	850-3500	3/4	Y	2 years	6 months	290	C	889	1,119
	160-2	38	12	8 1/4	N	1-8	2	CI	CI	VARIABLE SPEED	500-3000	3/4	Y	2 years	6 months	350	C	1,099	1,329
	260	38	12	8 1/4	N	1 1/4-8	2	CI	CI	VARIABLE SPEED	375-3300	1	Y	2 years	6 months	610	C	--	1,999
	260-1	38	12	8 1/4	N	1 1/4-8	2	CI	CI	BELT/ PULLEY	600-2800	1	Y	2 years	6 months	610	C	--	2,169
	260V w/DC motor	38	12	8 1/4	N	1 1/4-8	2	CI	CI	VARIABLE SPEED	50-3000	1	Y	2 years	6 months	610	C	--	2,299
GRIZZLY	G1025	40	15	13	N	1-8	N/A	TT	FS	BELT/ PULLEY	850-2510	1/2	N	1 year	1 year	100	T	--	155*
	G1174	40	14	8	N	1 1/8-12	N/A	FS	CI	BELT/ PULLEY	860-3096	1/2	N	1 year	1 year	180	T	--	395*
	G1495	40	14	17	N	1-12	2	CI	CI	VARIABLE SPEED	810-3096	3/4	Y	1 year	1 year	300	T	--	625*
JET	JWL-1236	34 1/2	12	8 3/4	Y	1-8	2	CI	CI	VARIABLE SPEED	550-3600	3/4	N	2 years	2 years	183	T	--	559
KLEIN	BASIC	12	5	4	N	3/4-16	N/A	EA	EA	BELT/ PULLEY	500-5200	1/6	Y	1 year	*	18	U	349	439*
POWERMATIC	45	38	12	12	N	1-8	2	CI	CI	*	VS: 330-2100 BP: 600-3000	3/4	Y	1 year	1 year	475	U	--	VS-2,900 BP-2,400
RECORD	RRML300C	12	8 1/2	14	Y	3/4-16	1	CI	CI	BELT/ PULLEY	540, 1140, 2400	1/3	N	1 year	1 year	77	E	--	550
	CL3/48M	48	12	30	Y	3/4-16	1	TT	CI	BELT/ PULLEY	510, 750, 1120, 1650, 2400	3/4	N	1 year	1 year	200	E	--	1,000
RELIANT	DD70	20	10	8	N	3/4-10	N/A	FS	FS	BELT/ PULLEY	980-3010	1/2	N	1 year	1 year	50	T	--	170*
SEARS	22836	36	12	8	N	3/4-16	1	MS "T" Rail	CI	BELT/ PULLEY	875-3450	1/2-1	N	1 year	1 year	47	T	--	200
	22816	36	12	8	N	3/4-16	1	ST	CI	BELT/ PULLEY	875-3450	1/2-1	Y	1 year	1 year	84	U	--	250
TRANSPOWER	HD1500	39	14	17	Y	1-12	2	CI	CI	BELT/ PULLEY	560-3500	1	Y	2 years	1 year	380	T	525*	575*
WILLIAMS & HUSSEY	L82	46	12	10 1/2	N	*	N/A	MS	C	BELT/ PULLEY	1725	1/2	Y	10 years	*	110	U	498**	598*

NOTES:

* Model 46-701 is supplied with stand, Model 46-700 without stand.

1. Diameter of spindle and number of threads per inch.
   (*) Williams and Hussey attachments have set screws, so they do not have threads or tapers.
2. (CI) Cast iron
   (EA) Extruded aluminum
   (FS) Formed steel
   (MS) Milled steel C channel
   (ST) Single steel tube
   (TT) Twin steel tubes
   (*) Head is constructed of CI with plastic cover
3. * Variable speed (VS) or belt/pulley (BP) available.
4. (*) With optional motor supplied by lathe manufacturer or importer.
5. (*) Motor warranty applies to optional motor supplied by manufacturer/importer.
6. (C) Canada
   (E) England
   (T) Taiwan
   (U) United States
7. (*) Price does not include shipping.
   (**) Price w/o motor does not include standard accessories.
   (***) List prices

N/A - Not available



Delta 33-990

RADIAL-ARM SAWS

Always considered one of the workshop's most useful tools, radial-arm saws have taken a bit of a bum rap lately. It seems woodworkers either love 'em or hate 'em. Here's what you need to know to make your own decision.

• A look at the radial-arm saw market. As you can see by the chart *right*, only three manufacturers offer radial-arm saws for the U.S. market. Since our last review of these saws in the June 1987 issue of *WOOD®* magazine, three brands–Black & Decker, DeWalt, and Inca–have stopped offering radial-arm saws to U.S. consumers. Why? Manufacturers tell us one reason is dwindling demand. Indeed, mitersaws have exploded in popularity in recent years, stealing market share from radial-arm saws. Unlike other power-tool categories, the limited number of radial-arm saws means you can easily try every available product before making a choice.

• Do you need a radial-arm saw? These saws excel at quick and repetitive crosscuts and dadoes, particularly in wide stock. For these attributes alone, many woodworkers would not be without one of these machines.

Unfortunately, radial-arm saws tend to be finnicky to adjust, and often go out of adjustment as

RADIAL-ARM SAWS: A LIMITED MARKET

MANUFACTURER/ IMPORTER	MODEL	BLADE SIZE (DIAMETER, INCHES)	CUTTING CAPACITY: DEPTH OF CUT (INCHES AT 0°)	CUTTING CAPACITY: DEPTH OF CUT (INCHES AT 45°)	CUTTING CAPACITY: MAXIMUM CROSSCUT (INCHES)	CUTTING CAPACITY: MAXIMUM RIP (INCHES)	INDEX STOPS: MITER	INDEX STOPS: BEVEL	MOTOR: TYPE (1)	MOTOR: HORSEPOWER (2)	MOTOR: VOLTS	MOTOR: AMPS	MOTOR: NO-LOAD BLADE SPEED (RPM)	MOTOR: ACCESSORY SPINDLE (Y, N)	CONSTRUCTION MATERIAL (3): ARM	CONSTRUCTION MATERIAL (3): COLUMN BASE	SIZE (4) WxDxH (INCHES)	TABLE WxD (INCHES)	WARRANTY (YEARS)	COUNTRY OF ASSEMBLY	WEIGHT (POUNDS)	LIST PRICE	SELLING PRICE
DELTA	33-990	10	3	2 1/4	12 3/4	24	0°, 45° L/R	0°, 45°, 90°	ODP	1	120/240	11/5.5	3,450	Y	CI	CI	42x37x53	24 3/4x42	2	U	178	$ 804	$ 620
	33-890	12	3 3/4	2 1/2	14 3/8	24 1/4	0°, 45° L/R	0°, 45°, 90°	ODP	1 1/2	120/240	14/7	3,450	N	CI	CI	30x32x63 1/2	25 1/2x30	2	U	300	1,829	1,500
RYOBI	RA202*	8 1/4	2 1/8	1 15/16	10 15/16	19 7/8	0°, 22 1/2°, 45° R, 0°, 22 1/2° L	0°, 45°, 90°	U	2*	120	12.5	5,000	N	FS	CA	27 1/2x27 1/2 x19 1/2*	27 1/2x21 3/8	2	U	65	800	389
SEARS	23470	8 1/4	2 3/4	2	12	20	0°, 22 1/2° L/R, 45° R	0°, 45°, 90°	U	2 1/2*	120	13	5,100	N	FS	CA	30x28x26*	30x21 1/2	1	U	76	--	329
	19633	10	3	2 1/4	15 1/2	26	0°, 45° L/R	0°, 45°, 90°	ODP	1 1/2, 2 3/4*	120/240	12/6	3,450	Y	CA w/steel tracks	CA	40x38x64	40x27 3/4	1	U	181	--	500
	19642	10	3	2 1/4	15 1/2	26	0°, 45° L/R	0°, 45°, 90°	ODP	1 1/2, 3*	120/240	13/6.5	3,450	Y	CA w/steel tracks	CA	40x38x64	40x27 3/4	1	U	186	--	600

NOTES: * Model 4590202 retrofit control cut kit is available to owners of Model RA200.
1. (ODP) Open, drip-proof (U) Universal
2. Continuous horsepower (*) Indicates maximum developed horsepower.
3. (CA) Cast aluminum (CI) Cast iron (FS) Formed steel
4. Height includes stand (*) Indicates height without stand.

soon as you change cutting angles. In a survey of *WOOD* magazine staffers, we found that nearly all of the radial-arm saw users set their saws for 90° crosscuts and leave them there. Although we prefer to use tablesaws or mitersaws for miter cuts, and tablesaws for ripping tasks, a radial-arm saw set for 90° cuts only still sees regular duty. Although you can use a radial-arm saw for many other tasks, you may end up paying for that versatility with time spent on adjustments.

•***The safety issue.*** Radial-arm saws have long had a reputation for being one of the least safe tools in a workshop. Fortunately, manufacturers have addressed this problem with new, more effective safety features. Every radial-arm saw on today's market has a blade guard and anti-kickback pawl that should provide a good margin of safety if you use the machine properly. Two companies—Sears and Ryobi—have recently gone one step further in adding to this safety margin.

Sears saws with 10" blades have a clear plastic guard that surrounds the blade until you lift it up by squeezing a lever built into the handle. The blade carriage cannot move forward of the fence until you squeeze the lever.

Ryobi has successfully dealt with the tendency of the blade carriage to lurch toward the operator. This happens when the blade binds and grabs the wood, or if you try to cut too fast. The Ryobi RA202 has a Control Cut Power Feed System that limits the traveling speed of the blade carriage.

•***Cutting capacity.*** Note on the chart *above* that radial-arm saws vary in cutting depth, maximum crosscut, and maximum rip. Keep in mind your needs and these specifications when shopping. For example, if you build lots of cabinets and need to rip to the center of a 4'-wide panel, the saw should have a maximum rip capacity of at least 24".

•***Controls and adjustments.*** Radial-arm saws have eight basic controls and loads of adjustments. Before making a purchase, ask a sales person to point these features out to you. Adjustments should be accessible and not too time-consuming to complete.

•***Look for arm strength.*** Among radial-ams saws, you'll find arms made of cast iron, cast aluminum, and formed steel. Cast iron and cast aluminum are the most rigid and durable of these materials, so these arms will flex the least and last the longest.

•***Motors.*** Smaller radial-arm saws come with universal motors that make them much noisier than saws with induction motors. We consider ear protection a must when operating these models.

•***Accessories.*** We've never found much use for the many accessories available for radial-arm saws such as drill chucks, flexible shafts, molding attachments, or sanding drums. Our advice: Save the money and find other ways to do such tasks.

RANDOM-ORBIT SANDERS

Black & Decker
Quantum model BD5200

Once only available in air-powered versions, random-orbit sanders have exploded in popularity ever since electric models came on the scene a few years ago. Here's help deciding if one of these machines deserves a place in your shop.

• ***Why they're hot.*** By combining the aggressive cutting action of a disc sander with the tiny-orbit swirling motion of a finishing sander, random-orbit sanders do the work of two sanders. So, armed with 60- or 80-grit sandpaper, random-orbit sanders will quickly hog away stock. With a fine-grit abrasive, these sanders will impart a silky-smooth surface.

Because the sanding scratches are in a random-swirl pattern, rather than distinct orbits or straight lines, they practically disappear when used with fine-grit abrasives. This makes random-orbit sanders especially adept at leveling and smoothing two pieces joined at a right angle, such as door and face frames.

• ***Drive train data.*** You'll find two types of drive-train configurations on random-orbit sanders. The first type have vertically-mounted, or *in-line* motors such as the model *above*. The other type have motors mounted at a *right-angle* to the sanding head.

Generally, the in-line versions are quieter, less aggressive, and easier to control. You can operate some of them, such as the palm-style units (DeWalt DW420, Makita BO 5000, Porter-Cable 334, and others) with one hand.

Right-angle sanders basically consist of an angle grinder and sanding head. These tend to have greater torque, so they cut material quite quickly.

• ***Variable speed equals control.*** Random-orbit sanders become harder to control at high speeds, so consider spending the extra money for a variable-speed model. Since most in-line sanders have the variable-speed switch built into the on/off trigger switch, you'll find them convenient to operate. We found the variable-speed controls on most right-angle machines harder to manipulate because they're located at the end of the motor barrel.

• ***Dust collection—a must!.*** These sanders make loads of fine dust, so we advise against purchasing any machine without some form of dust collection. The

best machines have bags and vacuum ports for collecting the debris.

• Points on pad size. Most random-orbit sanders come with 5" or 6" pads, so you'll find discs in these sizes more readily available than the 4½" discs required for some sanders. Although the 5" pads will meet the needs of most home woodworkers, consider a unit with a 6" pad if you plan to get a great deal of use out of the machine. These larger discs help you work faster, but they cost about 25 to 40 percent more than 5" discs.

• Don't forget about air-powered versions. If you have a generous source of compressed air, then seriously consider an air-powered sander (often referred to as dual-action or DA sanders). These sanders require about 14 cubic feet of air per minute (cfm), so only larger compressors will handle them.

In our tests, the least expensive air-powered DA sanders (under $60) compete favorably with the best electric versions. Top-of-the-line DA's have built-in dust collection and go for as much as $200.

In our February 1993 comparison of random-orbit sanders, the Black & Decker Quantum model BD5200 came out tops among machines priced $90 and under. In the over-$90 class, the Bosch 3283DVS, Porter-Cable 7336, and Skil 7484 earned our approval.

ROUND AND ROUND WE GO: 19 RANDOM-ORBIT SANDERS

MANUFACTURER/ IMPORTER	MODEL	TYPE (1)	PAD SIZE (INCHES)	PAD TYPE (2)	SPEED (3)	AMPS	HANDLE TYPE (4)	SWITCH TYPE (5)	DUST COLLECTION (6)	CORD LENGTH (FEET)	OPTIONAL ACCESSORIES (7)	WARRANTY (YEARS)	COUNTRY OF ASSEMBLY (8)	WEIGHT (POUNDS)	LIST PRICE	SELLING PRICE
AEG	TXE150	I	6	H	8,000-11,000	3.5	T	TR	B, S, TP	9.4	BP, HL, SA, SD, VH, VP	1	G	5.5	$275	$180
BLACK & DECKER	QUANTUM BD5100	I	5	H	10,000	2.8	T	TR	B, S, TP	6	DS, HL, HS, SD, VP	3	E	4.5	100	80
	QUANTUM BD5200	I	5	H	7,500-10,000	2.8	T	TR	B, S, TP	6	DS, HL, HS, SD, VP	3	E	4.5	100	90
BOSCH	3283DVS	I	5	H	8,000-11,000	2.3	T	TR	B, TP, VP	6.5	BP, DS, HS, SA, SD, VH	1	S	4	169	100
	1370DEVS*	R	6	H	4,800-11,000**	5	B	SL	B, TP, VP	13	BP, HS, SA, SD, VH	1	S	5.3	427	230
DeWALT	DW420	I	5	P	12,000	2	P	R	NONE	10	SD, HL, HS	1	U	3	120	75
	DW421	I	5	H	12,000	2	P	R	B, TP, VP	10	SD, PA, HS	1	U	3.2	133	85
FEIN	MSF636-1	R	6	H	7,500	3.6	B	SL	TP, VP	16.4	BP, HL, HS, SD, VH	1	G	3.7	695	650
MAKITA	BO5000	I	5	H	10,000	1.7	P	R	TP, VP	7	SD, VH	1	J	2.9	120	70
MILWAUKEE	6126	R	6	P	10,000	5.5	B	P	NONE	8	HS, SD	LIFE-TIME	U	5	214	135
	6127	R	5	P	10,000	5.5	B	P	TP, VP	8	HS, SD	LIFE-TIME	U	5.5	270	160
PORTER-CABLE	334	I	5	P	12,000	1.7	P	R	B, TP, VP	7	BP, HL, HS, PA, SA, SD, VH	1	U	3.5	135	80
	7336	R	6	P	2,500-6,000	3.7	B	SL	OPTIONAL	10	BP, DS, HL, HS, SA, SD, VH	1	U	5.5	250	135
	97355	R	5	H	2,500-6,000	3.7	B	SL	S, VP	10	BP, HS, PA, SA, SD	1	U	5.5	285	175
RYOBI	RS115	I	4½	H	0-11,000	2	T	TR	B, TP	6.3	BP, SA,SD	2	U	3.2	134	75
	RS112	I	4½	H	11,000	2	P	R	NONE	6.3	BP, SA,SD	2	U	2.1	90	49
SEARS	11604	I	4½	P	11,000	2	T	TR	B, TP	8	SD	1	U	3.2	70	70
SKIL	7384	I	4½	H	11,000	1.8	T	TR	B, TP, VP	8	BP, HS, SA, SD, VH	2	S	3.1	91	54
	HD7750	I	5	H	8,000-11,000	2.3	T	TR	B, TP, VP	8	BP, DS, HS, SA, SD, VH	1	S	3.6	159	95

NOTES:

* 1370DEVS has exclusive direct/indirect pad drive mechanism which allows heavy stock removal or fine finishing.

1. (I) In-line
   (R) Right-angle
2. (H) Hook-and-loop
   (P) Pressure-sensitive adhesive
3. Revolutions per minute. Listings for machines with variable-speed capability include low- and high-end of range.
   ** 1370DEVS has full-feedback speed control.
4. (B) Barrel with auxiliary handle
   (P) Palm style
   (T) T-handle
5. (P) Paddle
   (R) Rocker
   (SL) Sliding
   (TR) Trigger
6. (B) Bag
   (S) Shroud
   (TP) Through the pad
   (VP) Vacuum port
7. (BP) Buffing pad
   (DS) Dust shroud
   (HL) Hook-and-loop pads and abrasives
   (HS) Hard or soft backing pads
   (PA) Pressure-sensitive-adhesive pad
   (SA) Sponge applicator pad
   (SD) Sanding discs
   (VH) Vacuum hose
   (VP) Vacuum port
8. (E) England (G) Germany (J) Japan
   (S) Switzerland (U) United States

PRECISION TABLESAW FENCES

Biesemeyer commercial fence

A good-quality fence can make a big difference in the performance of your tablesaw. All of the models in the chart *right* will increase the speed, cutting accuracy, quality, and safety found with most standard tablesaw fences. Here's a look at each of these advantages, followed by a discussion of how to pick a fence that's right for you.

15 prices

•***Speed.*** Unlike a standard fence that requires you to use a tape measure to accurately gauge the fence-to-blade distance, precision tablesaw fences have mechanisms that eliminate this time-consuming procedure. You simply line up a hairline cursor at the front of the fence with a tape measure built into the front rail or tube that the fence slides along. Then, lock down a lever, and you're ready to make a cut. This takes just a second or two.

•***Accuracy.*** Of course, the preciseness of the *above* procedure depends on how accurately you set up the fence in the first place. To do this, you simply adjust the hairline cursor until the tape reads a sample cut exactly. Once you do this, all of your cuts will be dead on. Also, fences in this class have sturdy lock-down mechanisms that eliminate the possibility of the fence moving under the pressure of a cut.

•***Quality.*** As we've discovered in our tests of circular blades and dado sets, the quality of a rip cut depends as much on the fence being perfectly parallel to the blade as it does on the quality of the cutting tool itself. The fences in this group have the type of smart design and sturdy construction that keeps them parallel to the blade cut after cut.

•***Safety.*** For the same reasons that precision tablesaw fences give you better-quality cuts, they also reduce your odds of experiencing a workpiece kickback. That's because kickbacks often occur when stock binds between a blade and a misaligned fence.

•***Special features.*** All of these fences work so well, that making a purchase decision often boils down to choosing a model with the features you like. For instance, Delta has a fence that slides back and forth, so you can safely use it as a cutoff stop. You can also insert it in either a high or low

CHECK THESE STATS ON 10 AFTERMARKET FENCES

MANUFACTURER	MODEL	CAPACITY		MATERIALS			FENCE HEIGHT (INCHES)	CUSTOM SIZES AVAILABLE (Y, N)	MICRO-ADJUSTMENT (Y, N)	AVAILABLE ACCESSORIES (3)	WARRANTY (YEARS)	COUNTRY OF ASSEMBLY (4)	WEIGHT OF SYSTEM (POUNDS)	WEIGHT OF FENCE ONLY (POUNDS)	LIST PRICE	SELLING PRICE
		LEFT (INCHES)	RIGHT (INCHES)	RAILS (1)	FENCE (1)	FENCE LENGTH (INCHES) (2)										
BIESEMEYER	Commercial 26-122*	12-48	26-122	S	S, L	42, 48	2½	Y	N	AF, BT, XT	1	U	66-145	28	$295-495	$295-495
	Home Shop 28, 40, 52	12	28, 40, 52	S	S, L	36	2	Y	N	XT	1	U	45-65	20	249-279	249-279
DELTA	Unifence	8¾	30, 52, 96	A	A	32, 43	½ or 3½	N	N	AF, BT, CO, XT	2	U	48, 70, 101	14	330 422 658	245 290 N/A
ENLON	25" EN3202SF	12	25-46	S	S, L	31	3	Y	N	AK	90 days	T	53-65	20	170-220	140-190
	25" HTB10SF	11	25-50	A	A	36	3	N	N	AK	90 days	T	32-44	20	190-240	160-210
EXCALIBUR	T-Slot	**	**	A, S	A	45, 58	2½	Y	N	AK, CO, DR, LH, MA, RF, RK, SF, SP, XT, WS	LIFETIME	C	50	20	369	299
QUINTEC MFG.	Paralok	***	***	S	A	*	3½	Y	N	C	2	U	34-60	14	340	N/A
SEARS	Laser Line	24	30	A	A	36½	3	N	Y	NONE	1	C	43	12	249	249
VEGA	Professional 40, 50	10	40, 50	S	A	42, 50	2½	N	Y	AK, CO, LH, MA, SP	1	U	60, 67	16	280 295	280 295
	Utility 26, 50	8	26, 50	S	A	36	2½	N	Y	AK, CO, LH, MA, SP	1	U	32, 49	11	198 225	198 225

NOTES:

* Biesemeyer model numbers refer to cutting capacity to right of sawblades. Nine capacities from 26" to 122" available in 12" increments. You can also specify four left-side capacities in 12" increments, resulting in 36 total options.

** Rip capacity of 62" with 78" rails. You can position as much or as little of this travel on either side of the blade. Longer rails are available with rip capacity up to 128"

*** Fence travels a minimum of 28" or maximum of 96", depending on length of rail. You can position as much or as little of this travel on either side of blade.

1. (A) Aluminum
   (S) Steel
   (L) Laminated

2. (*) Paralok fence is 9" longer than the depth of the table it is installed on.

3. (AF) Auxiliary fence
   (AK) Anti-kickback device
   (BT) Back table
   (C) Various cursors
   (CO) Cutoff fence
   (LH) Laminate hold-down
   (MA) Micro adjust
   (RF) Router fence
   (RK) Router-mounting kit
   (SF) Powered stock feeder
   (SP) Stock pusher
   (XT) Extension table
   (WS) Adjustable work stop to position fence

4. (C) Canada
   (T) Taiwan
   (U) United States

position (the low position works for safely cutting thin materials).

The Excalibur fence rides on wheels that make it incredibly easy to move around for various cutting widths. It also has the widest array of accessories, with several router-table components not available from its competitors.

Vega's models have a second locking handle and micro-adjustment knob. With this feature you can lock in a cut, then fine-tune it to within tight tolerances.

On a totally different track, the Paralok works like a cable-rigged drafting table. This helps keep the infeed and outfeed ends of the fence in exact alignment.

• ***Ease of installation and adjustments.*** You will probably install these fences only one time, and adjust them infrequently, so these considerations should be low on your priority list. Nevertheless, it pays to know that most of these fences require just an hour or so for installation. The Excalibur and Paralok require more time because of the complexity of their rail systems.

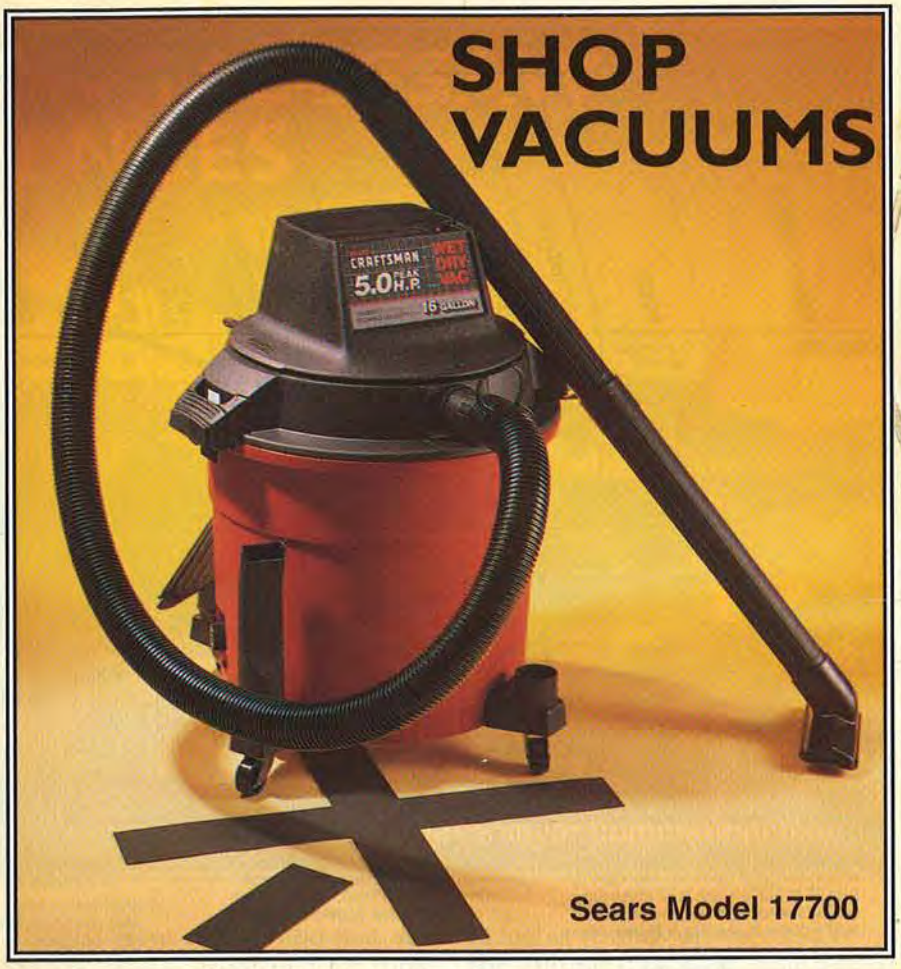
For setting the fences parallel, we prefer models such as the Biesemeyer and Delta that have just two easily accessible setscrews for this adjustment. All of the machines have hairline cursors that adjust quickly.

In our June 1989 test of precision tablesaw fences, we favored the Biesemeyer units for their good value, rugged simplicity, proven track record, and customer service. The home-shop version should be durable enough for your needs unless you use your tablesaw for several hours each day.

However, all of the fences worked well, and would greatly enhance the performance of any tablesaw. So, carefully consider the special features of each one. The Enlon and Sears units were not on the market at the time of our initial test.

TOOL BUYER'S TREASURE

Every time you shave, saw, or sand a piece of wood, you end up with the machined workpiece and a mess. Dispose of the latter in short order with a reliable, hardworking shop vacuum.



• ***Suction.*** To judge this important feature, take a look at the static pressure (sp) and volume flow rate categories in the chart *right*. Here's a look at each.

Static pressure reflects the lifting power of a vacuum. A machine with a higher sp number will do a better job of lifting heavier material such as water, nails, metal shavings, and small chunks of wood. Units with high sp ratings have two fans, and cost at least two or three times more than machines with one fan. For most home woodworkers, a one-fan unit should do the job. Vacuums with high-volume flow rates, expressed in cubic feet of air moved per minute (cfm), will remove larger volumes of fine dust than units with lower cfm ratings.

• ***Wet/dry vs. dry-pickup-only.*** As their name implies, wet/dry vacuums will pick up water without damaging the tank, fan, or motor. Although dry-pickup-only vacuums work fine in the woodshop, wet/dry units will find more use throughout your home.

• ***Tank capacity and construction.*** Shop vacuums generally vary from five to 28 gallons of capacity. The smaller units will handle most cleanup jobs, and are easier to carry from place to place. But, we find tanks smaller than 15 gallons inappropriate for many shop tasks. For example, a small tank will fill up in no time if you hook it to a machine that produces lots of sawdust.

Most economically priced shop vacuums have plastic or fiber tanks. Fiber tanks, made for dry pickup only, offer lots of capacity for a low cost. They also puncture and rot easily.

• ***Standing in for dust collectors.*** Except for a few limitations, shop vacuums work well as dust collectors when hooked up to woodworking equipment. What limitations? First, they have noisy universal motors designed for intermittent use. Dust collectors have quieter induction motors meant for continuous use. Second, because shop vacuums don't move as much air as dust collectors, you can hook them up to only one machine at a time.

• ***Hose size.*** A good deal of the shop vacuums in the chart *right* come with 1¼"- or 1½"-diameter hoses. Although these work fine for picking up water, you need a 2½" hose for woodworking tasks. Such a hose will add $10–$15 to your investment.

For all-around value, in the *WOOD*® magazine shop we use Sears shop vacuums with at least 3 peak horsepower. However, like most reasonably priced vacuums, these models make lots of noise. If you're looking for a quieter vacuum, we like the Fein 92013 (the only model that turns on when your power tool turns on) and the Shop-Vac Quiet Super Power (QSP) line of vacuums (models 900-80 through 900-84, depending on tank size).

CLEAN FACTS ABOUT 22 SHOP VACUUMS

MANUFACTURER/ IMPORTER	MODEL	TYPE (1)	BLOWER: NUMBER OF FANS (2)	BLOWER: STATIC PRESSURE (3) (SP)	BLOWER: VOLUME FLOW RATE (4) (CFM)	BLOWER: AMPS	MOTOR: PEAK HORSEPOWER	MOTOR: MATERIAL (5)	TANK: SIZE (GALLONS)	TANK: FILTER TYPE (6)	STANDARD HOSE SIZE (DIAMETER-INCHES x LENGTH-FEET)	WHEELS (7)	STANDARD ACCESSORIES (8)	FEATURES: CORD LENGTH (FEET)	FEATURES: BLOWING CAPABILITY (Y, N)	FEATURES: DRAIN (Y, N)	FEATURES: ACCEPTS DISPOSABLE BAGS (Y, N)	FEATURES: WARRANTY (YEARS)	COUNTRY OF ASSEMBLY (9)	WEIGHT (POUNDS)	LIST PRICE	SELLING PRICE
BOSCH	1702	W	2	80	102	9	2.5	S	10	FCB	1½ x 12	PC	GN	18	Y	N	N	1	U	40	$ 438	$299
DELTA	49-255	D	1	75	109	7.5	1	F	28	CP	2½ x 6	*	GN	8	Y	N	N	2	U	24	198	N/A
DIRT DEVIL	08900	W	1	50	122	10	3.5	P	8	PPC	2½ x 7	C	AT, CT, FN, GN, WN, XW	15	Y	N	N	2	U	22	90	80
	081600	W	1	55	131	12	5	P	16	PPC	2½ x 7	C	AT, CT, FN, GN, WN, XW	20	Y	Y	N	2	U	25	109	100
FEIN	92013	W	2	90	120	9.5	1.6	P	10	PPC	1½ x 16.4	C	CN, CT, DB, FN, GN, WN, XW	22	N	N	Y	1	G	30.9	695	650
GENIE	SV10-20020	W	1	56	115	9.2	2	P	10	FP	1¼ x 7	C	FN, WN, XW(2)	6	Y	N	Y	2	U	16	107	60-70
	Pro 20-3031	W	1	51	133	11	3	P	20	PPC	1¼ x 7 2½ x 6	C	B	10	Y	N	Y	3	U	27	159	100-110
JET	JV-10	W	2	75	104	9	1.75	SS	10	FCB	1½ x 12	PC	FN, HC, SS, WN, XW	18	N	N	N	1	T	50	395	329
MAKITA	XBV01B	D	1	NA	--	6.2	1.75	P	N/A	CP	1¼ x 3	N/A	CT, GN	15	N	N	Y	1	U	6	124	N/A
	XSV10	W	1	80	100	6.5	1.7	SS	10	PPC	1½ x 12	C	DB, GN, XW	25	N	Y	N	1	U	45	472	N/A
MILWAUKEE	8955	W	1	49	97	6.2	1.5	S	10	PPC	1½ x 7	PC	XH	18	N	N	N	LIFE-TIME	U	32	328	195
	8925	W	2	105	110	10	2.5	SS	15	CP	1½ x 10	PC		30	Y	Y	Y	LIFE-TIME	U	53	1,104	695
PORTER-CABLE	7810	W	2	61	123	9	N/A	P	5	PPC	1⅜ x 13	C	GN	25	Y	N	Y	1	G	16.5	448	280
RYOBI	10V28	D	1	60	120	9	2	F	28	FCB	2½ x 10	C	GN, XW(2), XH	20	Y	N	Y	2	U	29.5	225	129
SEARS	17744	W	1	43	120	6	2	P	6	PPC	2½ x 7	CS	GN, XW	6	N	N	N	1	U	12.5	40	40
	17701	W	1	47	140	7.6	3	P	8	PPC	2½ x 7	CS	CN, CT, GN, WN, XF, XW	15	N	N	N	1	U	18.5	70	70
	17702	W	1	50	160	10	4	P	12	PPC	2½ x 7	CS	CN, GN, WN, XW	15	Y	Y	Y	1	U	21.75	90	90
	17700	W	1	50	165	11.2	5	P	16	PPC	2½ x 7	CS	CN, GN, WN, XW	15	Y	Y	Y	1	U	28	100	100
SHOP-VAC	505-05	W	1	50	100	7.4	1.25	P	5	FP	1¼ x 6	C	FN, WN, XW (2)	12	N	N	Y	2	U	10	64	55
	707-08	W	1	60	132	8.4	1.75	P	8	FP	1¼ x 7	C	FN, WN, XW (2)	6	Y	N	Y	2	U	14	95	N/A
	900-83	W	1	52	155	7	2	P	12	FP	8	C	AN, AT, CT, DB, FN, WN, XW (2)	18	N	N	Y	2	U	21	157	N/A
	870-72	W	1	59	170	11.7	4	P	16	FP	2½ x 6	C	GN, XW (2)	12	Y	N	Y	2	U	25	180	N/A

NOTES:

1. (W) Wet/Dry
   (D) Dry only
2. Referred to as 1-stage or 2-stage.
3. Inches of water a vacuum will draw up a hose (manufacturer ratings).
4. Cubic feet of air per minute (CFM) through a 2½" orifice (manufacturer ratings).
5. (F) Fiber
   (P) Plastic
   (S) Steel
   (SS) Stainless steel
6. (CP) Cloth and paper
   (FCB) Foam inside cloth bag
   (FP) Foam and paper
   (PPC) Pleated paper cartridge
7. (C) Casters
   (CS) Casters with storage
   (HH) Handheld unit
   (PC) Push cart
   (*) Casters optional
8. (AN) Auto nozzle
   (AT) Accessory tote
   (B) Both 2½" and 1¼" accessories standard
   (CN) Carpet nozzle
   (CT) Crevice tool
   (DB) Dust brush
   (FN) Floor nozzle
   (GN) General-purpose nozzle
   (HC) Hose cage
   (SS) Stainless-steel accessories
   (WN) Wet nozzle
   (XF) Extra filter
   (XH) Extra hose
   (XW) Extension wand
   (*) Metal accessories
9. (G) Germany (T) Taiwan (U) United States N/A - Not Available

A BOX THAT'S SCROLLSAW THIS CURIOUS

It takes just a few simple scrollsaw cuts to create this entertaining box. But, there's a catch—you must make those cuts in a specific order. Don't worry, though; we've mapped out all the moves for you, so you can cut out this puzzler in short order.

Note: *We cut our box from 1¾" square stock. If your scrollsaw won't accept material that thick, you can adapt the design to fit smaller square stock. For cutting, we used a no. 5 blade, .037×.015" with 14 teeth per inch.*

Referring to the full-sized Side View pattern, *opposite page*, draw the *red* outside cutting line, designated no. 1, on one face of a 1¾×1¾×6" piece of stock. (We made one box of walnut and another of Philippine mahogany.) Saw around the line. Sand the edges as necessary.

Stand the workpiece on the bottom—the flattest edge, and mark a cutting line along the curved upper surface ¼" from the back, shown by the *green* line (no. 2) on the Top View drawing. Saw along the line to cut off the thin back piece. Set the back aside to use later.

Now, draw the removable keys, the *yellow* lines shown as no. 3 on the Side View pattern. Scrollsaw the keys—the mouth and the tail. Feed the work into the saw carefully and slowly to avoid flexing the blade excessively. Bending the blade as you cut results in tapered pieces that may not slide apart readily. Set the keys aside, and turn the workpiece onto the flat bottom again.

Draw the *purple* cutting line for the lid (no. 4) onto the curved surface facing up. Scrollsaw along that line, then slide the lid piece off. Set it aside.

With the lid off, draw the *blue* interior cutting line (no. 5) where shown. Drill a 1/16" blade start hole where shown, then insert the scrollsaw blade and cut out the center section of the body.

On the cutout part, draw a line about 3/16" below the keyed edge and parallel to it, shown by line no. 6 on the Inner Lid and Supports drawing. Cut off the inner lid, then saw the ends from the remaining piece where shown by lines no. 7.

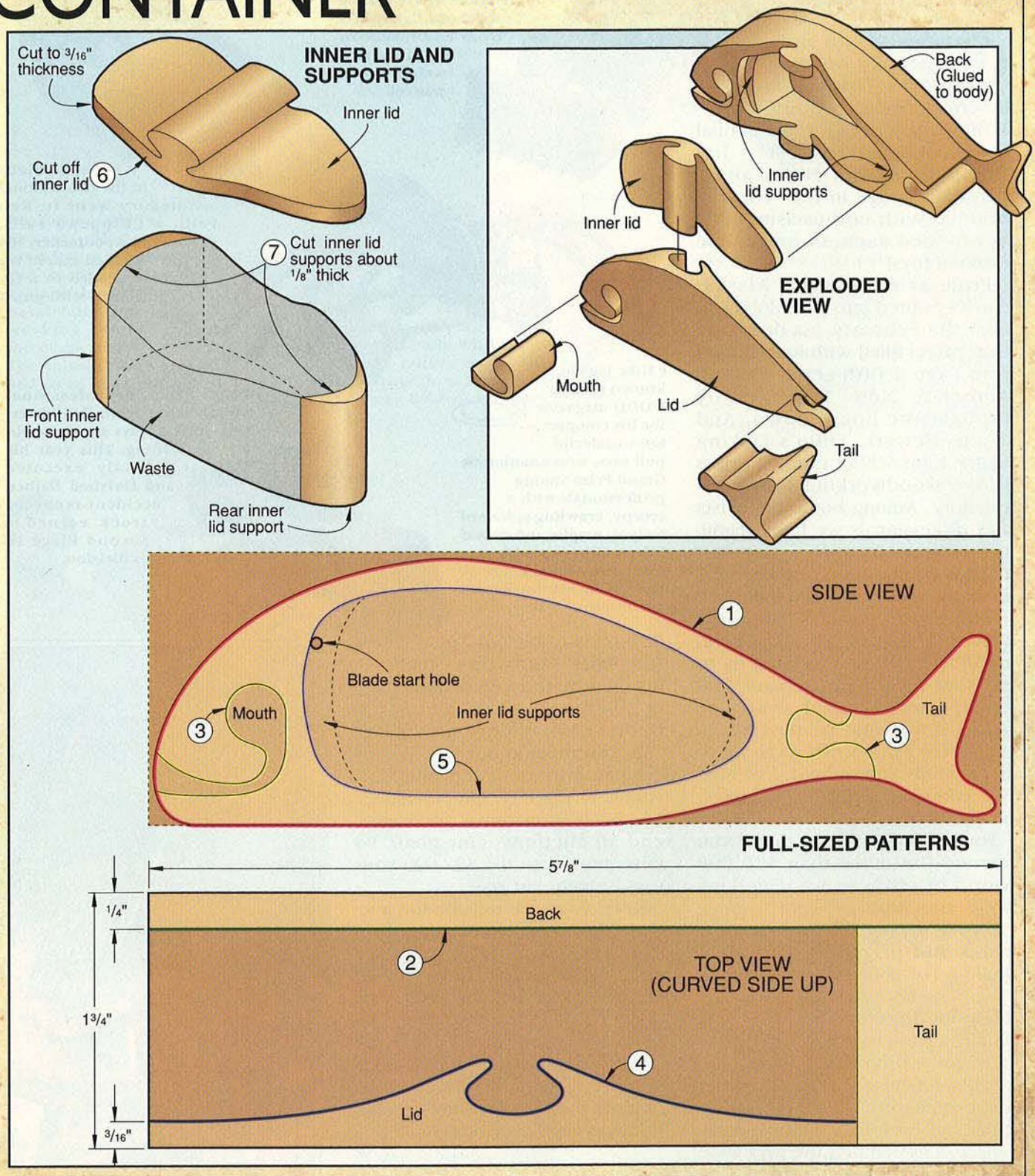
To assemble the box, first glue the thin back piece to the body with woodworker's glue. Align the front end and edges, and clamp. Remove any squeeze-out in the key slots or the interior.

Glue the inner lid supports into position at the front and back of the interior cavity. You can use woodworker's glue or cyanoacrylate adhesive for these parts.

After the glue dries, sand as necessary. Set the inner lid into place, slide the lid onto the body, and drop the keys into position. Sand the outside of the box. Remove the keys and lids, then apply a clear oil finish on all parts, taking care not to build it up so thick that the parts won't fit together. When dry, reassemble the box.

Project Design: Thomas J. Wiley,
Pied Piper Productions
Illustrations: Kim Downing
Photograph: John Hetherington

A BIT FISHY CONTAINER

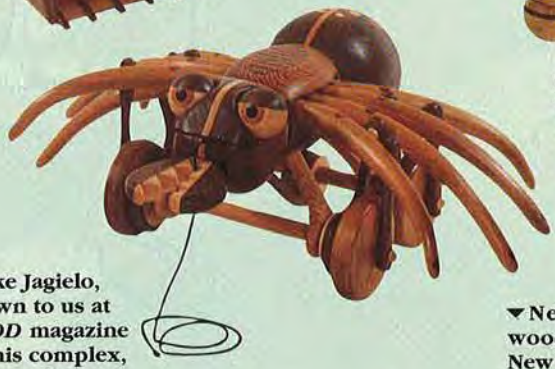


1994 BUILD 'A-TOY™ WINNERS

A SALUTE TO

Mike Schaffner of Owatonna, Minnesota, claimed first place in the professional division. His working model of a Caterpillar front-end loader in maple and walnut was a marvel.

▲ Third Place in the professional category went to Ken Prill, a Chippewa Falls, Wisconsin, woodturner. His 12-piece spalted maple tea set came nestled in a fitted box lined with green velvet.



Mike Jagielo, known to us at *WOOD* magazine for his complex, but wonderful pull toys, won unanimous Grand Prize among professionals with a creepy, crawling spider of walnut, maple, and exotic inlays. Mike is a cabinetmaker in Almond, Wisconsin.

▼ Neil Seely, a professional woodworker from Rochester, New York, always seems to win something. This year his perfectly executed and finished flatbed accident-recovery truck earned a Second Place in his division.

Craftsmanship and ingenuity on display! That best describes readers' entries in *WOOD*® magazine's sixth annual Build-A-Toy® contest. Jim Downing, design editor and a perennial judge in the contest, beamed with enthusiasm: "I've never seen such an incredible batch of toys!"

From as far away as Alaska, entries poured into Des Moines to beat the February 1st deadline. One parcel filled with handcrafted toys from a fifth-grade class in Amherst, New York, really brought the house down. And again, Newark, Ohio's Licking Valley High School claimed prizes in the woodworking shop-class category. Among home hobbyists and professionals we found familiar winners from the past, but entries from contest newcomers in many cases outshined them.

There was sadness, too. Just before the judging, Juanita Powe, of Slidell, Louisiana, called us to say that Huey, her husband, had unexpectedly passed away. She asked if it would be possible to return the toy (shown on *page 96*) for a family remembrance of him. We complied, with our sincerest sympathy.

For a complete list of those who earned the more than $16,000 worth of prizes in woodworking tools and supplies, turn to *page 96*. And on *page 98*, you'll find the rules and prizes for the 1995 Build-A-Toy contest.

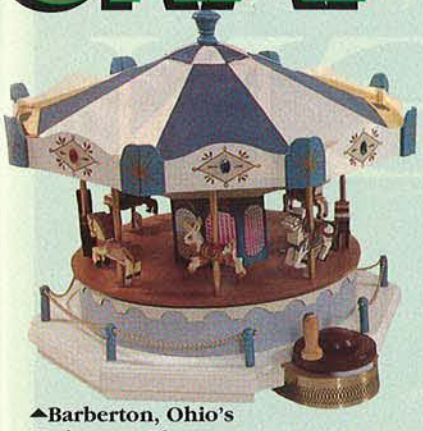
Help for Toys for Tots

For the past two years, Build-A-Toy entries have been exhibited at Silver Dollar City theme park near Branson, Missouri, during their fall National Crafts Festival. Then, in December, the toys were auctioned to benefit Toys for Tots. But this year, inspired by the tremendous reader effort, we'll place the toys on public display during October and November at our Des Moines corporate headquarters and elsewhere in the city. On November 16, we'll sponsor an auction to end all auctions. Our goal? To raise more than the $22,000 your toys brought last year.

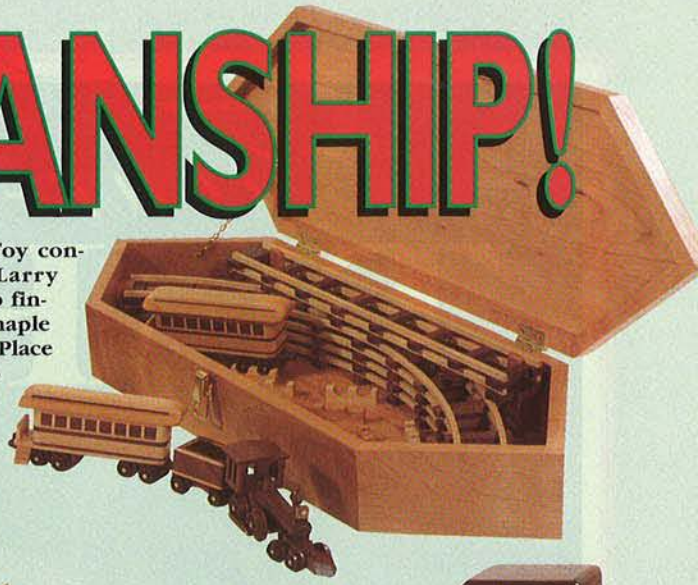
Keep your eye out for the auction details on next month's "Finishing Touches" page at the back of the issue. Meanwhile, study the toys shown, then start planning your entry for the 1995 Build-A-Toy contest. And let's say a hearty thank-you to the prize sponsors and all those who entered in 1994, because in children's eyes, they're all winners!

Continued on page 96

CRAFTSMANSHIP!



▲Barberton, Ohio's Robert Elsmore blended mechanical and woodworking skills to capture Third Place among home hobbyists with his working carousel. Turn the crank and it revolves. The animals also move up and down in animation.



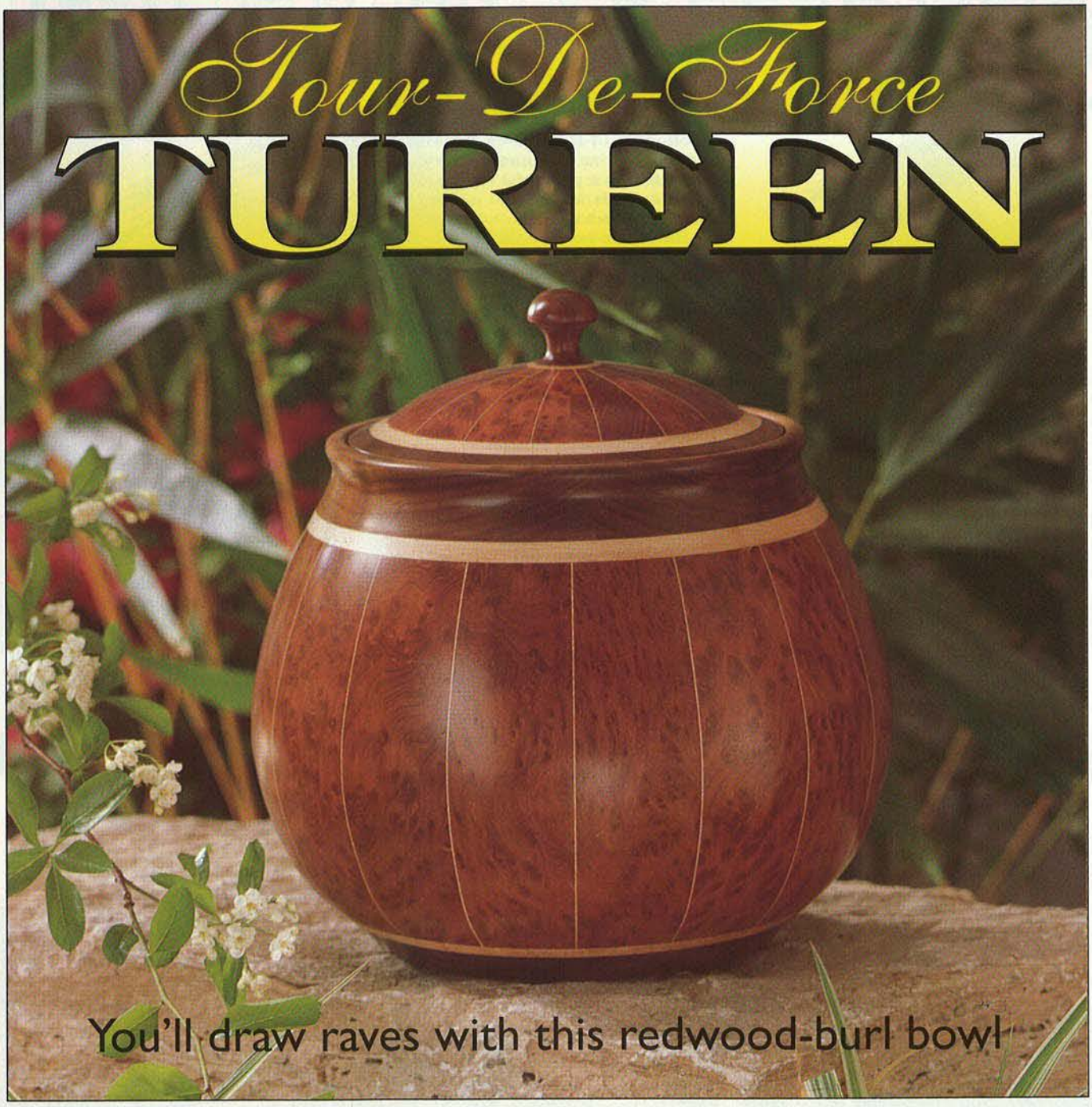
▶Followers of the Build-A-Toy contest recognize the name Larry Weaver. He's a perennial top finisher, and his walnut and maple boxed train set took Second Place in the home-hobbyist division. Larry does his woodworking in Petersburg, West Virginia.

▶Peter F. Friedel, a woodworker from Baltimore, Maryland, spared no details with his pine semi tanker truck. His effort earned him First Place in the home hobbyist category.

▶Grand Prize winner in the home-hobbyist division was Matt Drown of Slayton, Minnesota. His walnut and maple western gambler gumball dispenser was both ingenious and expertly crafted. Just wiggle its ears and the figure drops a treat from its mouth!

◀On judging day, Jim Downing, *WOOD* magazine's design editor, Capt. Michael Schmidt, USMC, and David Jordan, V.P. New Products of Meredith Corp., get ready to inspect the entries.

Tour-De-Force TUREEN



You'll draw raves with this redwood-burl bowl

Looks great! Saves wood! For many turners, advantages like these offset the extra effort that goes into building a staved blank. See for yourself, and feel the pride of accomplishment as you create this lovely lidded bowl, another great design from the lathe of *WOOD*® magazine's art director and master turner Lee Gatzke.

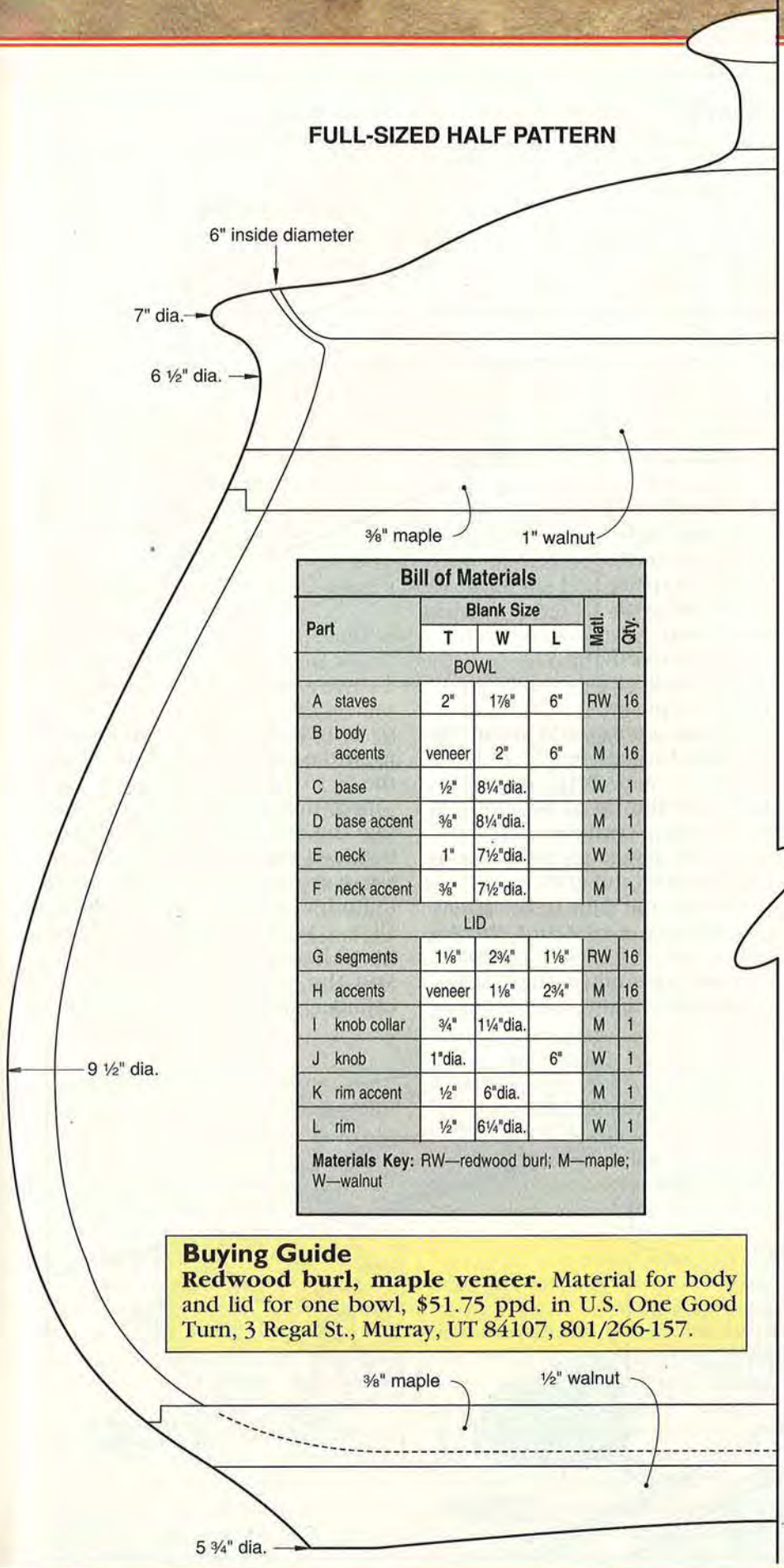
We used these tools and supplies

Stock: Approximately 3 bd. ft. redwood burl and 2 sq. ft. of maple veneer, ⅜" maple, ½" walnut, 1" walnut. (See the Bill of Materials for sizes, and the Buying Guide for our redwood-burl source.)

Lathe equipment: Two 4-6" metal faceplates, drive center, revolving tail center.

Tools: ⅛" parting tool, ¼" and ½" bowl gouges, ¼" spindle gouge.

Speeds: Roughing, 800-1000 rpm; turning and sanding, 1200-1600 rpm.



Bill of Materials

Part	Blank Size T	W	L	Matl.	Qty.
BOWL					
A staves	2"	1⅞"	6"	RW	16
B body accents	veneer	2"	6"	M	16
C base	½"	8¼"dia.		W	1
D base accent	⅜"	8¼"dia.		M	1
E neck	1"	7½"dia.		W	1
F neck accent	⅜"	7½"dia.		M	1
LID					
G segments	1⅛"	2¾"	1⅛"	RW	16
H accents	veneer	1⅛"	2¾"	M	16
I knob collar	¾"	1¼"dia.		M	1
J knob	1"dia.		6"	W	1
K rim accent	½"	6"dia.		M	1
L rim	½"	6¼"dia.		W	1

Materials Key: RW—redwood burl; M—maple; W—walnut

Buying Guide

Redwood burl, maple veneer. Material for body and lid for one bowl, $51.75 ppd. in U.S. One Good Turn, 3 Regal St., Murray, UT 84107, 801/266-157.

Bowl turning can be so straightforward. Just attach a solid block of wood to the lathe, put a gouge to it, and presto! A bowl! Why, then, would anybody go to the effort of cutting a lot of wedge-shaped pieces of wood (*staves*) and gluing them together to construct a bowl blank?

Here's one practical reason: A lot less wood goes to waste. A staved blank starts out nearly round, and it's already hollow, so you generate fewer chips while roughing out your vessel. That, along with the fact that you can use small pieces of stock—even scraps—makes staved construction economical. And, of course, you aren't limited to making a bowl only as large as the biggest chunk of wood you can find.

You'll find aesthetic advantages, too. Building up a blank from staves lets you display face grain or a special figure all around a turning. And, it gives you almost endless opportunities to mix different woods for color, texture, and grain patterns that will make your finished piece unique.

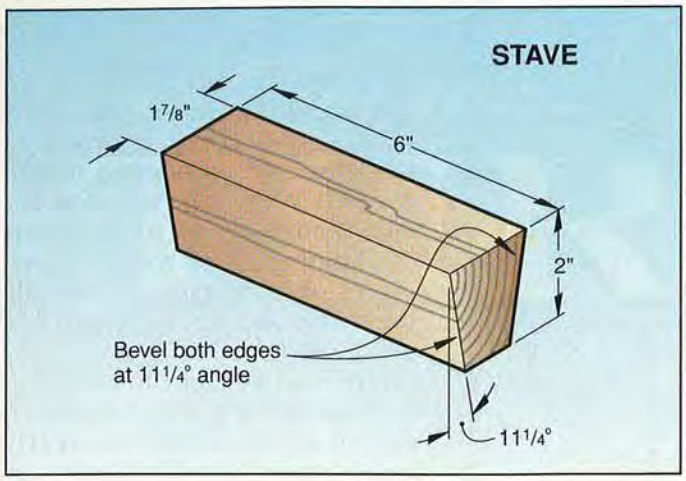
This gorgeous lidded bowl makes a strong case for the advantages of staved construction. The beautiful figure of the redwood burl shows from every angle, set off by stripes of maple veneer. As for economy, this bowl's dimensions would require a solid block of heroic proportion (and cost).

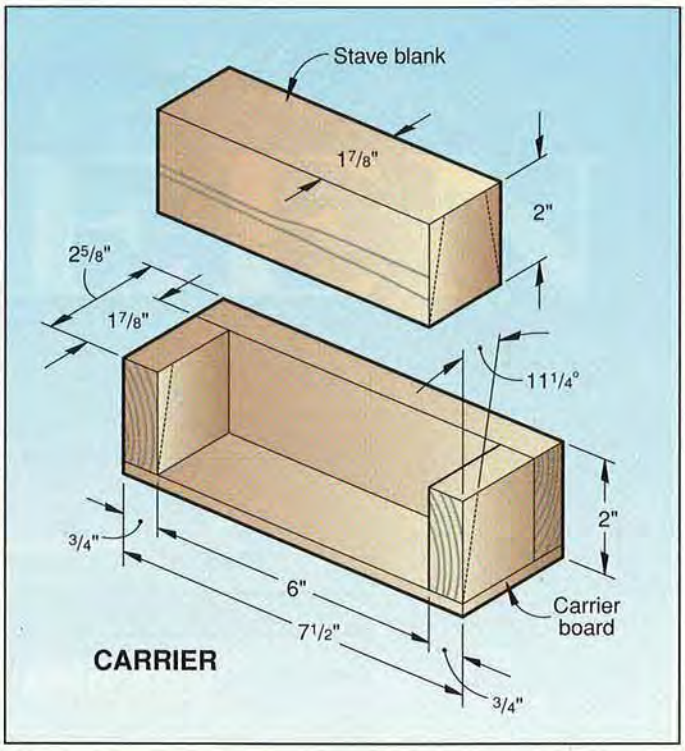
Build the bowl blank

To construct the bowl blank, first cut 16 staves like the one shown on *page 76, top left,* from 2"-thick stock. The wide faces of the staves become the outside of the blank. Cut 16 pieces 2×2×6", then bevel-rip the edges. Saw a few pieces of scrapwood the same size for test cuts.

You'll need a carrier like the one on *page 76, top right*, to bevel-rip the edges safely and accurately. Build one from scrap-

Continued





wood, using the dimensions in the drawing. (We first built a three-sided tray with inside dimensions of 2×2¼×6", using simple nailed and glued butt joints. Then, with the tablesaw, we trimmed the carrier to 1⅞" wide at an 11¼° angle where shown. When you cut the jig to width, leave the saw fence in position to rip the staves.)

Saw the bevel on both edges of each stave. Place each blank into the carrier with the best face down. (Test-cut four scrapwood staves to check the jig's accuracy. When you put the four together, they should form a 90° angle between their outside edges.)

After sawing the staves, cut 16 pieces of maple veneer 2" wide by 6" long. Be sure to use solid veneer for these pieces, not self-adhesive or paper-backed veneer. Only the thin edge will show in the completed turning, so you don't need veneer with a fancy figure, either.

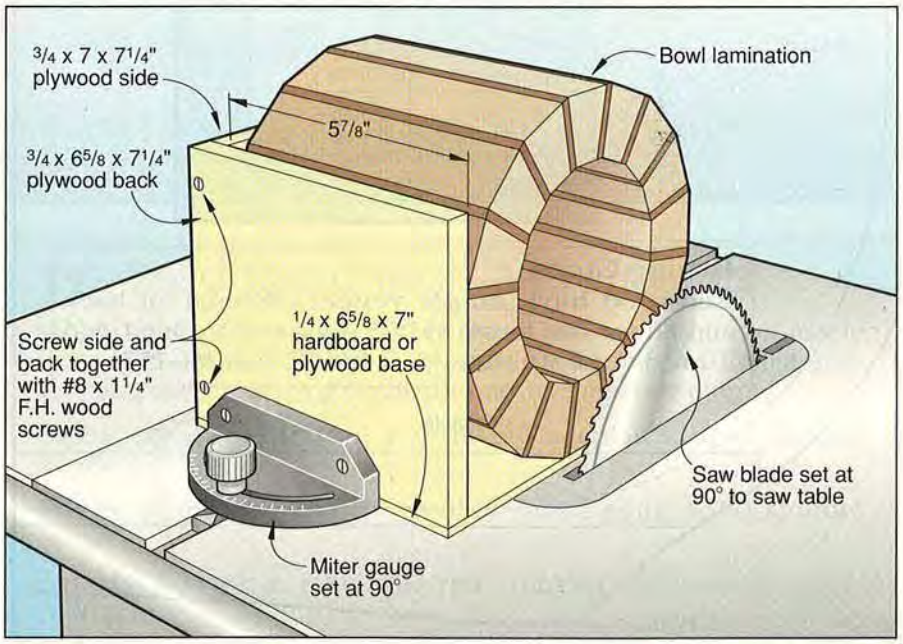
Stand the staves on your bench to form a cylinder, then slip a piece of veneer into each joint. Cinch up the assembly with a band clamp, and inspect all joints for tightness. Check the outside diameter now, too. It should measure somewhere between 9⅝" and 9¾", depending on the thickness of your veneer strips.

Glue together the 32 components of the blank with slow-set epoxy. Alternate veneer strips and staves. As you build the glue-up, stand it on a piece of waxed paper on your benchtop. When fully assembled, wrap the built-up blank with waxed paper, and secure with band clamps.

Lay waxed paper and a ¾×10×10" piece of plywood on top, and clamp the assembly to your bench to keep the ends even. With a square, check the glue-up to be sure it is standing up straight. After the glue cures, scrape the squeeze-out from the sides and ends.

To square the ends of the glued-up cylinder, construct the jig shown *below* for your tablesaw. Set your saw's miter gauge at 90° to the blade, then position the jig so you can saw ⅛" or slightly less from the end of the blank. Screw the jig to the miter gauge.

Place the cylinder in the jig, and saw the end, rotating the cylinder between cuts. When you have cut away around one end, turn the cylinder end-for-end in the jig, slide a ⅛"-thick packing of hardboard between the back of the jig and the square-cut end of the cylinder, and trim the other end.


3/4 x 7 x 7 1/4" plywood side
Bowl lamination
5 7/8"
3/4 x 6 5/8 x 7 1/4" plywood back
Screw side and back together with #8 x 1 1/4" F.H. wood screws
1/4 x 6 5/8 x 7" hardboard or plywood base
Saw blade set at 90° to saw table
Miter gauge set at 90°

It's time to turn the body

Mount a 10"-diameter wooden auxiliary faceplate about 1" thick on your lathe's metal faceplate. True the face and edge of the auxiliary faceplate. Center the end of the blank that will be the top of the bowl on the faceplate, then glue it into place. Here's one way to center the blank: Turn a recess in the faceplate 1/16" deep and the same diameter as the blank. Glue the blank into the recess.

Turn the cylinder to the bowl's largest finished diameter, 9½". True the end with a light scraper cut. Then, following the profile shown on *page 75*, turn the outside of the bowl to shape, using a bowl gouge.

Turn the inside to correspond to the outside shape. As you work, gauge the wall thickness with a caliper at several points to ensure uniformity. Don't attempt to make your bowl too thin—a wall thickness of ¼" is ideal.

Form a ⅛×⅛" rabbet on the end of the bowl body to receive the base, as shown on the template. Make the cut by coming straight in from the end of the turning with your parting tool. Dismount the faceplate and workpiece from your lathe. Remove the metal faceplate from the back of the auxiliary faceplate.

Add the two-tone base

Attach a new auxiliary faceplate to your metal faceplate, and true the face and edge. Glue together an 8¼"-diameter circle of ½"-thick walnut and one of ⅜"-thick maple. After the glue dries, center and glue the walnut side of the lamination onto the wooden faceplate.

Measure the outside diameter of the body at the bottom. Add ¼" to that measurement, then turn the base lamination to that size.

Next, measure the inside diameter of the rabbet in the base of the body. Turn a rabbet on the maple face of the base lamination to mate with the one in the body. To ensure a tight joint, check the fit frequently as you work .

With the base lamination still mounted on the lathe, apply glue to the rabbet and assemble the body and base. Make sure the body is square to the base, then slide the lathe tailstock up to clamp the parts together.

After the glue has dried, turn the outside of the base to profile. Part the auxiliary faceplate from the top of the bowl. Inside the bowl, cut a slight curve as indicated by the dotted line on the template. Be careful not to cut into the rabbet joint, which would weaken it.

The neck completes it

Trim the turning to 6½", measuring from the bottom of the base to the top edge of the body. Now, form a ⅛×⅛" rabbet in the top edge, as you did for the base.

Dismount the faceplate and workpiece from the lathe. Remove the metal faceplate from the back of the auxiliary faceplate, first marking both so you can rejoin them later with the same orientation. Attach a new auxiliary faceplate to the metal faceplate, and true it.

Now, laminate stock for the neck. Glue a 7½"-diameter circle of 1"-thick walnut to a same-sized circle of ⅜"-thick maple. Center and glue the walnut side onto the auxiliary faceplate

Turn the neck lamination to 7" diameter. Then, following the template, rough-shape the neck inside and out. Allow an extra ⅛" or so on both surfaces. As you did with the base, turn a rabbet in the maple side of the neck lamination to mate snugly with the body.

To glue the neck piece to the body, remove the metal faceplate from the back of the neck turning, and reattach it to the bottom of the bowl. Mount the bowl on the lathe, apply glue to the rabbet, and position the neck turning. Again, clamp with the tailstock.

After the glue dries, part off the auxiliary faceplate at the top of the neck. Complete shaping the neck, blending it into the bowl body inside and out. Take care not to cut into the rabbet joint. Also, shape the neck opening to receive the lid.

Sand the inside with a flap sander while the lathe is running. Also with the lathe running, sand with progressively finer grits of handheld sandpaper, ending with 320 grit. Similarly sand the outside, beginning with a disc sander instead of the flap sander.

Apply satin Deft lacquer or other clear finish. (We applied three coats with a cloth and sprayed two final coats, sanding between them with 320-grit sandpaper.) Part the bowl from the lathe. Sand and finish the bottom.

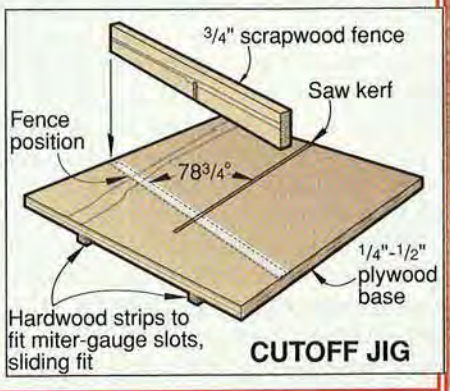
Now, put a lid on your bowl

Cut 16 segments for the lid from 1⅛"-thick redwood burl. To saw the wedge-shaped pieces safely and accurately, build a sliding-table jig for your tablesaw, following the illustration *below*.

For the segments, start with 1⅛×3×18" stock (or as long as possible). Joint one edge, then rip the piece to 2¾" wide—both edges must be straight and parallel for accuracy. Prepare a same-sized piece of scrapwood.

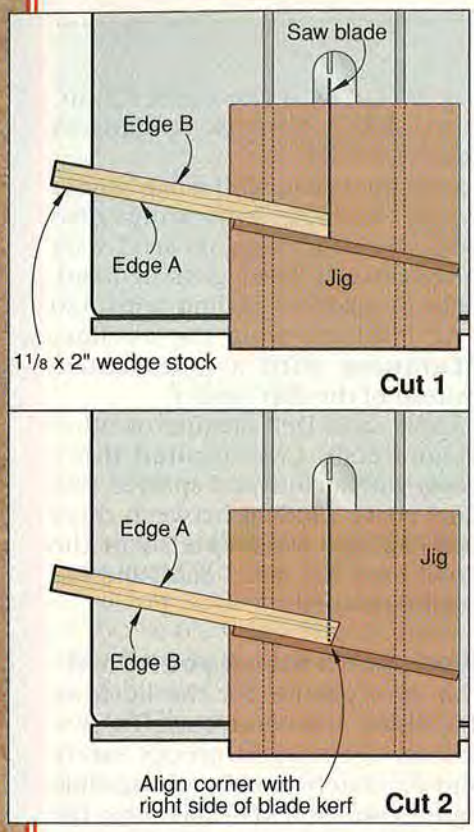
Using the sliding table, saw one end of your scrapwood at 11¼°. Now, to cut the first wedge, flip the piece over, placing the opposite edge against the jig's fence, as shown by Cut 2 in the illustration on *page 78, top left*. Flip the stock again, align the short corner with the right side of the kerf as shown, and cut the next wedge. Flip the wood, and repeat.

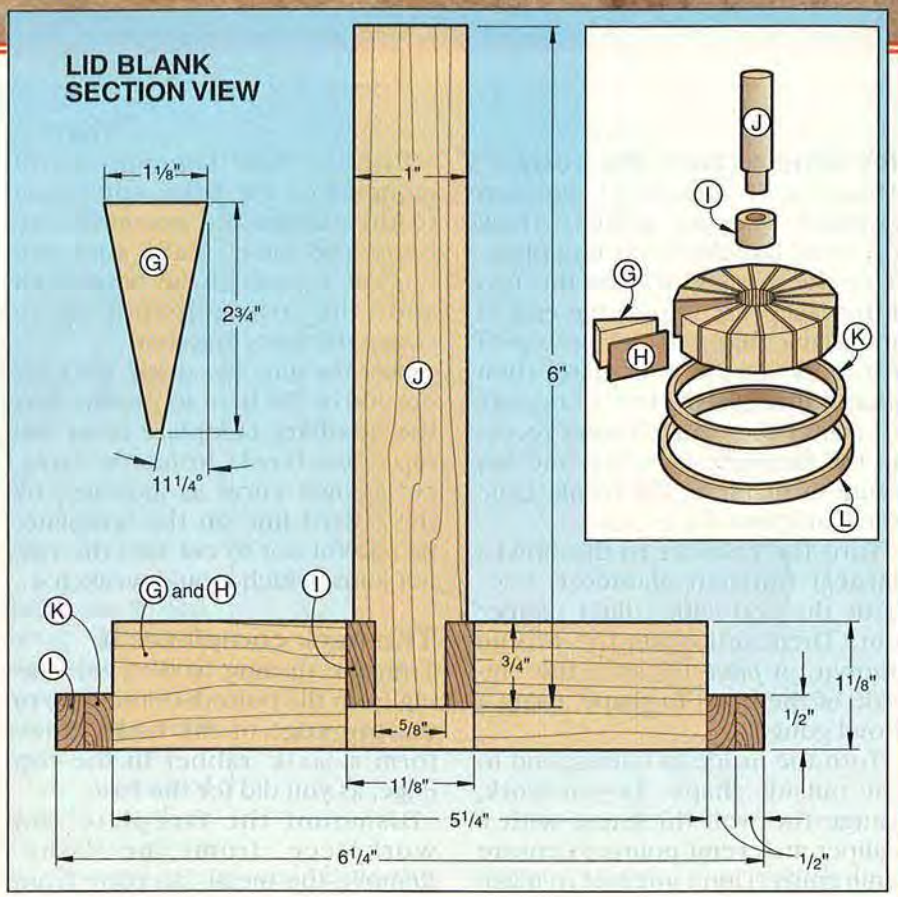
Continued



CUTOFF JIG

TUREEN





After you have cut four wedges, lay them next to each other on a smooth surface. The outside edges should form a 90° angle. If not, recheck the angle of the jig's fence, adjust as needed, and try again. When you have adjusted the jig to cut accurately, saw the 16 redwood wedges, using the same alternating-edge scheme.

Assemble the lid blank

Cut 16 pieces of maple veneer 1⅛×2¾". Arrange the 32 parts into a circle, alternating maple slices and redwood wedges. Tighten a band clamp around the assembly, and check the joints for tightness.

Then, glue with slow-set epoxy, arranging the segments on a piece of waxed paper on your benchtop. Wrap the outside edge of the glue-up with waxed paper, and clamp. To keep it flat, lay waxed paper and a scrapwood disc on top, and clamp to the benchtop.

Allow the glue to cure, then remove the clamps and scrape off the squeeze-out. Sand both faces, keeping them parallel. With a Forstner bit or holesaw, bore a 1⅛" hole through the center.

Bandsaw a 1¼"-diameter circle from ¾"-thick maple. Bore a ⅝" hole through the center. Now, mount a 6" length of 1" walnut dowel between centers on your lathe. Turn the tailstock end to a ⅝"-diameter tenon ¾" long. Glue the maple ring onto the tenon, keeping the dowel perpendicular to the ring.

Grip the end of the walnut dowel in a 3- or 4-jaw lathe chuck. If you don't have one, attach a 1½"-thick auxiliary faceplate to your lathe's faceplate. Round down the edge. Then, with a gouge, form a centered hole 1" deep to hold the dowel snugly.

Turn the maple ring on the dowel to fit into the 1⅛"-diameter center hole bored through the redwood-and-maple glue-up. Glue the larger part onto the maple ring, pushing it on far enough to align the top of the maple ring flush with the top of the larger piece. (See the Lid Blank illustrations *above*.) Keep the larger circle parallel to the faceplate as you glue it into position. After the glue cures, turn the large disc to 5¼" outside diameter.

On another faceplate, attach a 6"-diameter, ¾"-thick auxiliary faceplate. Bandsaw a 6" circle from ½" maple, and glue it to the auxiliary faceplate. Turn the outside to 5¾" diameter, keeping the edge perpendicular to the face. Cut in from the face with the parting tool to form a 5¼" inside diameter. Fit this ring (K) around the assembly where shown.

In the same manner, start with an auxiliary faceplate and a ½"-thick walnut circle, both 6½" in diameter. Turn the outside diameter to 6¼", and the inside diameter to 5¾". Fit this ring (L) around the maple ring. This completes the blank for the lid.

Turn the lid to the template profile. Turn the outside first. Match the outside contour on the inside, keeping a wall thickness to match your bowl. Turn the outer rim to fit the bowl opening. Sand the lid inside and out.

Form the knob on top last—you need the strength of the full dowel to support the lid during turning. Part off the lid at the top of the knob. Finish the lid to match the bowl.

Project Design: C.L. Gatzke Photographs: John Hetherington Illustrations: Kim Downing; Roxanne LeMoine

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100	7/8 HP ROUTER	$102
310	PRODUCTION LAMINATE TRIMMER	145
312	PRODUCTION OFFSET LAMNT TRIMMR	158
314	4 1/2" TRIM SAW	135
315-1	7 1/4" BUILDERS SAW	117
330	SPEED BLOCK FINISHING SANDER	60
332	QUIKSAND 5" RNDM ORB W/STIKIT PAD	66
332K	332 W/CASE & 100 SHEETS PAPER	92
333	QUIKSAND W/HOOK & LOOP, DUSTLS	74
333K	333 W/CASE & 50 SHEETS PAPER	99
334	QUIKSAND W/STIKIT, DUSTLESS	74
334K	334 W/CASE & 100 SHEETS PAPER	99
345	SAW BOSS 6" CIRCULAR SAW	104
347	7 1/4" FRAMERS SAW 15 AMP, 10.25 LBS	128
351	3" X 21" BELT SANDER	148
352	3" X 21" BELT SANDER W/DUST BAG	152
9352VS	3" X 21" VS DSTLS BELT SANDR W/CSE	165
360	3" X 24" BELT SANDER W/DUST BAG	192
361	3" X 24" BELT SANDER	184
362	4" X 24" BELT SANDER W/DUST BAG	197
363	4" X 24" BELT SANDER	192
410	UNDERSCRIBE LAMINATE TRIMMER	148
411	MITER FOLD LAMINATE TRIMMER	165
447	7 1/4" FRAMERS SAW W/BRAKE 15 AMP	138
505	1/2 SHT FIN SANDER	124
550	*NEW POCKET CUTTER*	178
556	BISC JOINER W/CASE & TILT FENCE	172
556K	SAME AS ABOVE W/1000 BISCUITS	195
690	1 1/2 HP ROUTER W/1/4" & 1/2" COLLETS	134
690K	690 W/CS, EDGE GUIDE, & TEMP GD KIT	179
9690	1 1/2 HP ROUTER W/CASE	144
691	1 1/2 HP "D" HANDLE ROUTER	149
693	PLUNGE BASE ROUTER, 1 1/2 HP	169
695	SHAPER TABLE W/ 1 1/2 HP ROUTER	217
696	SHAPER TABLE	129
2620	3/8" VSR DRILL, 0-1200 RPM W/CHK	89
5008	DOVETAIL TEMPLATE	79
5009	MORTISE & TENON JIG	47
5116	OMNI JIG	253
6931	PLUNGE ROUTER BASE	74
7116	*NEW 24" OMNIJIG*	293
7310	LAMINATE TRIMMER, 5.6 AMP	88
7312	OFFSET TRIMMER	127
7319	TILT BASE TRIMMER	99
97335	5" RANDOM ORBIT SANDER, VS W/CSE	132
7335K	7335 W/CS, DUST EX SYS, 100 SHTS PPR	165
97336	6" RANDOM ORBIT SANDER, VS W/CSE	137
7336K	7336 W/CS, DUST EX SYS, 100 SHTS PPR	169
73333	RANDOM ORBIT DUST EXTRACTION	24
7518	3 1/4 HP FIXED BASE ROUTER-5 SPEED	269
7519	3 1/4 HP FIXED BASE ROUTER-1 SP	235
7536	2 1/2 HP FIXED BASE ROUTER	202
7537	2 1/2 HP FIXED BASE "D" HNDL RTR	208
7538	3 1/4 HP PLUNGE ROUTER-1 SPEED	235
7539	3 1/4 HP PLUNGE ROUTER-5 SPEED	269
7549	TOP HANDLE BAYONET SAW	134
7649	BARREL GRIP BAYONET SAW	147
7700	*NEW 10" LASERLOC MITER SAW*	338
9118	PORTA PLANE KIT W/CASE, CRBD BLD	209
9314	4 1/2" TRIM SAW KIT	152
9315	7 1/4" BUILDERS SAW KIT	139
9345	SAW BOSS 6" CIRCULAR SAW KIT	123
9347	7 1/4" FRAMERS' SAW W/STEEL CASE	138
9637	TIGER SAW VAR SPD RECIP SAW KIT	144
9647	TIGER CUB RECIP SAW KIT	119
9840	CRDLS DRILL KIT W/2 BAT, CS KYLS CK	148
9853S	12V CRDLS KIT W/2 BAT, CASE	169
97310	LAMNT TRIMMR KIT W/4 BASES & CS	194

Panasonic

EY6181CRKW	*NEW PREDATOR* 9.6V CORDLESS KIT VSR W/KYLS CHUCK, 22 STAGE CLUTCH W/2 BAT, CASE & CHRGR	158
EY6100CRKW	*NEW PREDATOR* 12V CORDLESS KIT VSR W/KYLS CHUCK, 22 STAGE CLUTCH W/2 BAT, CASE, & CHARGER	189

RYOBI

BT3000S	10" TABLE SAW WITH STAND	549
AP12	12" PORTABLE PLANER	399
TSS220	8 1/2" SLIDE COMPOUND MITR SAW	438
OSS450	OSCILLATING SPINDLE SANDR	174
D38VSR	3/8" VSR DRILL, 4.0 AMP, 0-2500 RPM	59

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28-180	BENCH TOP BAND SAW	164
31-080	1" BELT 5" DISC SANDER	93
31-460	4" BELT 6" DISC SANDER	128
33-060	NEW SIDEKICK 6 1/2" FRAME & TRIM SAW	379
34-182	TENONING JIG	84
37-070	*NEW* 6" VS BENCH JOINTER	259
40-560	16" SCROLL SAW, 2 SPEED	179
50-075	DUST COLLECTOR SWEEPER, 3/4 HP	254
50-175	*NEW* KICKSTAND PRTBL WORK STAND	179

Milwaukee

0406-1	9.6V KYLS CDLS DRILL KIT W/2BAT, CS	169
0407-1	SAME AS ABOVE BUT 12 VOLT	173
6010	1/2 SHEET FINISHING SANDER	123
6017	1/4 SHEET FINISHING SANDER W/BAG	56
6125	5" RANDOM ORBIT SANDER	113
6126	6" RANDOM ORBIT SANDER	118
6256	TOP HANDLE JIG SAW	144
6491	10" MITER SAW W/BAG & 80T BLADE	298
6492	10" MITER SAW KIT COMPLETE	334
6507	VAR SPEED SAWZALL W/BLADES & CSE	145
6508	SAME AS 6507 BUT W/PERMANENT CRD	145
6527	SUPER SAWZALL W/BLADES & CASE	174
6528	SAME AS 6527 BUT W/PERMANENT CRD	174

SENCO

SLP20	BRAD NAILER W/CASE 5/8"-1 5/8" CAP	268
SFN40	FINISH NAILER W/CASE 1 1/4"-2 1/2" CAP	379

DEWALT

DW100	3/8" DRILL, 0-2500 RPM, 4 AMP	68
DW318K	4.5 AMP HVY DTY JIG SAW KIT W/CS	147
DW360	7 1/4" SAW W/BRAKE	149
DW430	3" X 21" DUSTLESS BELT SANDER	164
DW431	3" X 21" DSTLS BELT SANDER VAR SP	180
DW610	1 1/2 HP ROUTER, 9 AMP	147
DW614	1 1/4 HP PLUNGE ROUTER	143
DW615	1 1/4 HP PLUNGE ROUTER, VAR SP	158
DW624	3 HP HVY DUTY PLUNGE ROUTER	245
DW625	3 HP HVY DTY PLUNGE RTR, VAR SP	269
DW682K	BISCUIT JOINER KIT	224
DW9090	SUPER BATTERY CHARGER	119
DW944K2	9.6V CORDLESS KIT W/2 BATTERIES	148
DW945K2	12V CORDLESS KIT W/2 BATTERIES	166

HITACHI

D10DFKBE	9.6V, CRDLS DRILL KIT W/2BAT & CS-KYLS	148
D5RCDVAKBE	12V CORDLESS DRILL KIT W/2 BAT	189
D10VC	3/8" DRILL VAR SP, REV, 3.2 AMPS	59
SV12SA	4 3/8" PALM GRIP SANDER	54
C8FB2	8 1/2" SLIDE COMPOUND MITER	579
C10FC	10" COMPOUND MITER SAW	259
CJ65V2	TOP HANDLE JIG SAW W/CASE	158
P20SB	3 1/4" PLANER, 3.4 AMP	89
TR6	LAMINATE TRIMMER	92
M8V	VAR SPEED PLUNGE ROUTER, 1/4"	149
TR12	3 HP PLUNGE ROUTER	184
M12V	3 HP VAR SPEED PLUNGE ROUTER	232

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1003VSR	3/8" VSR DRILL W/KEYLESS CHUCK	92
1194VSR	1/2" VSR, 2 STAGE HAMMER DRILL	139
1272D	3" X 24" DUSTLESS BELT SANDER	205
1273D	4" X 24" DUSTLESS BELT SANDER	208
1273DVS	4" X 24" VS DUSTLSS BELT SANDER	219
1370DEVS	6" VS DSTLS RNDM ORB SNDR	224
1584VS	CLIC BARREL HANDLE JIG SAW, VS INCLUDES FREE CASE	157
1587VS	TOP HANDLE JIG SAW, VS W/CASE	162
1604	1 3/4 HP ROUTER	142
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1613EVS	2 HP VAR SP PLUNGE ROUTER INCLUDES FREE EDGE GUIDE	199
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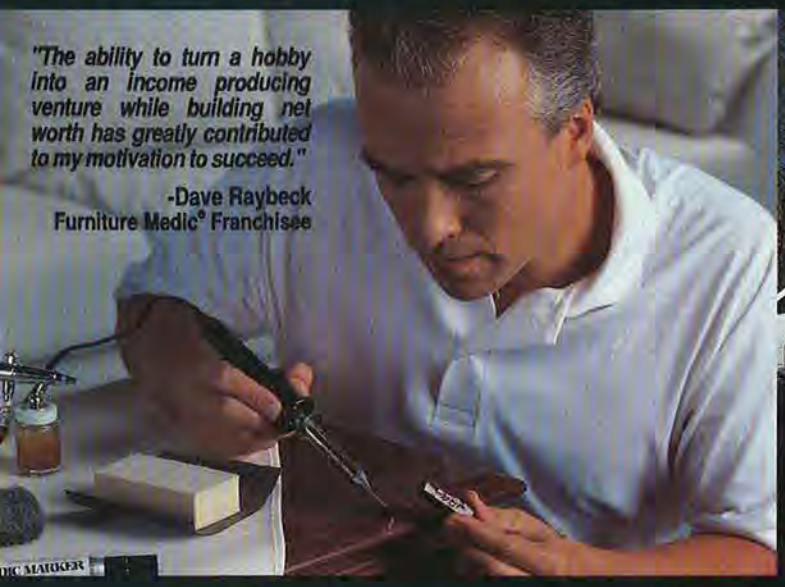

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2670	1/2" Impact Wrench	149
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31-340	1" Belt 8" Disc Sander	203
31-460	4" Belt 6" Disc Sander	127
32-100	Plate Joiner	258
36-040	8" Compound Miter	154
36-090	Sidekick 10" Miter Saw	213
36-220	10" Compound Miter	228
40-150	15" Scroll Saw	115
40-560	16" Scroll Saw	177
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9314	Trim Saw w/ Case	151
315-1	7 1/4" Circular Saw	117
9315-1	Saw w/Case	138
351	3x21 Belt Sander	149
352	3x21 BeltSander w/bag	152
352VS	Variable Speed 352	158
360	3x24 BeltSander w/bag	189
361	3x24 BeltSander	182
362	4x24 BeltSander w/bag	199
363	4x24 BeltSander	191
410	Underscribe Router	148
505	1/2 Sheet Sander	118
556	Biscuit Joiner w/adj fence	172
690	1 1/2 Hp Router	133
9690	Router with Case	144
691	1 1/2 Hp D-handle Router	148
6931	Plunge Base	74
695	Router Table&Motor	216
696	Router TableOnly	128
1700	Heat Gun	66
5008	12" Dovetail Jig	78
5116	16" Dovetail Jig	257
7116	24" Dovetail Jig	294
7334	5" R.O. Sander	119
73333	Duet Kit for R.O. Sander	23
7538	3 1/4 hp Plunge Router	233
7539	VS Plunge Router	261
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BT3000	Table Saw	529
DS1000	Detail Sander	39
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QS1000	Quick Stand	42
R50K	Trimmer 2 base Special	99
R70K	Trimmer 2 base Special	99
RA202	6" Radial Arm Saw	388
RE600	3hp Plunge Router	219
RS112	Random Orbit Sander	54
RS115	HD Random Orbit Sander	73
S550	Finish Sander	53
SC160	Scroll Saw	134
TR30U	Laminate Trimmer	85
TS251	10" Miter Saw	169
TS254	10" Miter Saw	197
TS260	10" Comp. Miter Saw	238
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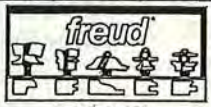

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LM72M010	10" 24T Rip	36
LU65M015	15" 108T Finish	98
LU82M010	10" 60T Chipboard	45
LU69M010	10" 72T Aluminum	57
LU92M010	10" 60T Corian®	58
LU98M010	10" 80T Laminates	66
LU72M010	10" 40T ATB	39
LU87M010	10" 24T Thin Kerf	39
LU79M010	10" 60T Crosscut	44

SMARTLEVEL

SL224	2' economy Level	$ 54
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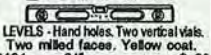

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2469	36"	42
2467	48"	49
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2699	6 ft —Svial	99
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2701	8 ft —Svial	125
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Economy Style 48"	2437	39
Economy Style 72"	2411	59

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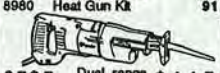
0407-1	Cordless Drill Kit-2batt	172
0564-1	Cordless Drain Cleaner	192
3900-1	Rt Angle Drill	189
5192	Die Grinder	174
5362-1	1" Hawk Hammer	318
5365-1	1" Hawk Hammer Kit	348
5369-1	3/4" D-handle Falcon Kit	238
5371-1	1/2" Hammer Drill	183
5375-1	1/2" Hammer Drill Kit	178
5392-1	3/8" Hammer Drill	126
6140	4 1/2" Grinder	98
6142	4 1/2" Grinder Kit	123
6175	14" Chop Saw	278
6369	7 1/4" Circ.saw Kit	147
6460	10" Circular Saw	258
6490	10" Miter Saw	254
6491	10" Miter Saw w/80t Blade	268
6528	VS Super Sawzall	164
6539-1	Inline Screwdriver	74
6546-1	2 spd Inline Screwdrver	81
6767-1	Screwdriver Kit	134
8980	Heat Gun Kit	91



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NR83A	Framing Nailer	379
TR6	Laminate Trimmer	91

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DW682K Biscuit Joiner $222

DW106	3/8" Keyless Drill	73
DW610	1-1/2 Hp Router	148
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Electric Tools Division
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Utica, NY 13501-1739
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315/792-2600

Air America
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213 Industrial Drive
Jackson, TN 38301
901/423-7000

American Machine & Tool (AMT)
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Mesa AZ 85210
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Black & Decker
626 Hanover Pike
Hampstead, MD 21074
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410/239-5000

Bosch
S-B Power Tool Co.
4300 West Peterson Ave.
Chicago, IL 60646
312/286-7330

Bostitch
Stanley Bostitch
Briggs Drive
East Greenwich, RI 02818

Bridgewood
Wilke Machinery
3230 Susquehana Trail
York, PA 17402
800/235-2100
717/764-5000

Campbell Hausfeld
100 Production Drive
Harrison, OH 45030
800/543-8622
513/367-3134

Carba-Tec
Penn State Industries
2850 Comly Road
Philadelphia, PA 19154
800/377-7297
215/676-7606

Charge Air Pro
(see DeVilbiss address and phone number under Air America)

Delta
246 Alpha Drive
Pittsburgh, PA, 15238
800/438-2486
412/963-2400

DeWalt
626 Hanover Pike
P.O. Box 158
Hampstead, MD 21074
800/433-9258

Dirt Devil
Royal Appliance Co.
650 Alpha Drive
Cleveland, OH 44143-2172
800/321-1134
216/449-6150

Elu
(see Black & Decker listing)

Emglo Air Compressors
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Johnstown, PA 15904
814/269-1000

Enlon
19400 San Jose Ave.
City of Industry, CA 91748
800/888-9697
909/468-3688

Excalibur
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Scarborough, Ontario,
Canada M1V 3H5
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Fein
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800/441-9878
412/331-2325

Freud
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High Point, NC 27264
800/472-7307
910/434-3171

General
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Canada J2B 5A8
819/472-1161

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206/351-6000

Klein
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Mass. residents: 617/585-4364
Calif. residents: 909/986-1168

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La Mirada, CA 90638-5753
714/522-8088

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Quincy Compressor
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Quintec Manufacturing
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Record
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Canada L1W 3V6
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Ryobi
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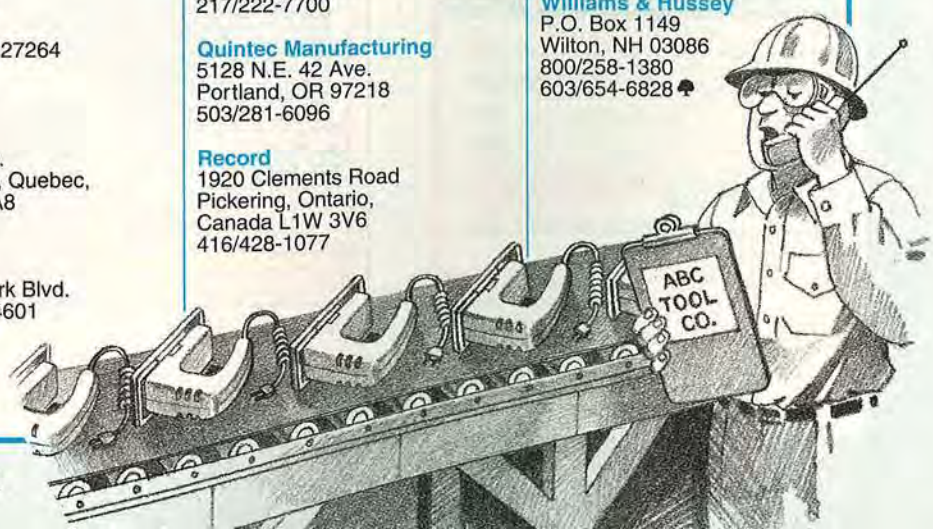

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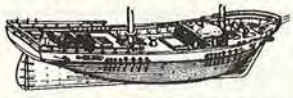

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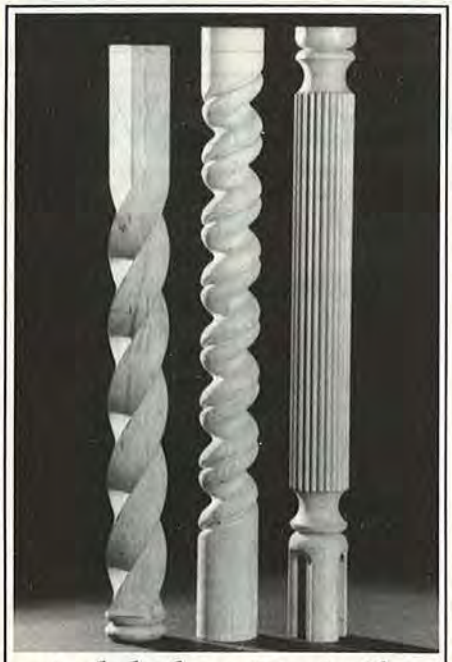

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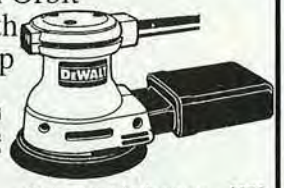

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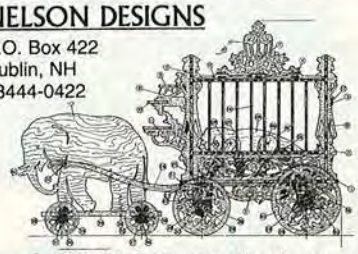

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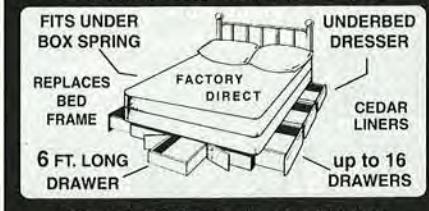

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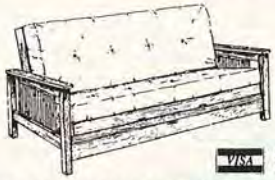

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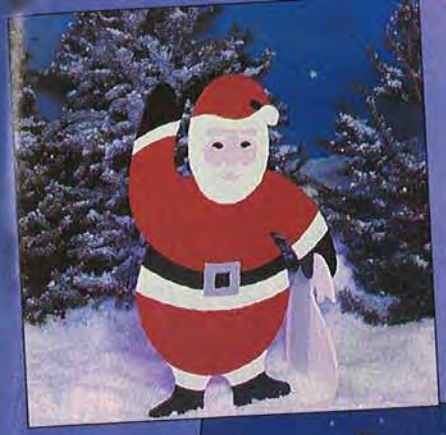

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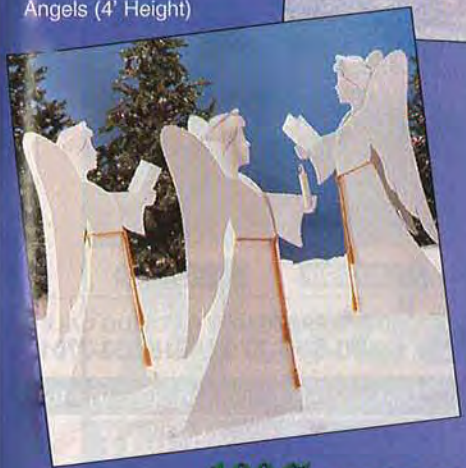

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Sometimes, loggers harvesting particular species such as Ponderosa pine and holly prefer to fell timber in the winter when the sap is down. Their logs then have little chance to develop a sap-born fungus called blue stain, which discolors the wood and lowers its value.

In tropical Mexico and Nicaragua, loggers intent on harvesting the valuable primavera tree must pay close attention to its sap flow, too. If they cut when the sap runs high, it seeps out the ends of the log and quickly attracts a horde of insects that damage the wood before it gets to the mill. But how, in continually mild weather, can they tell when the sap is low? It's simple enough to them: They watch the moon.

Like ocean tides, the sap of the primavera tree follows the phases of the moon. When the moon is on the increase, the sap rises. In the dark phases of the moon, it falls. So that's when the harvest of this unusual tree begins.

Primavera wood, without the defect of tiny pinholes caused by insects, becomes beautiful furniture. Its yellowish-red color streaked by brown, orange, and red, frequently displays a fiddleback figure. If moonstruck, however, the wood has little value.

When the moon fades, so does the primavera's sap, and loggers ready their saws.

Illustration: Jim Stevenson

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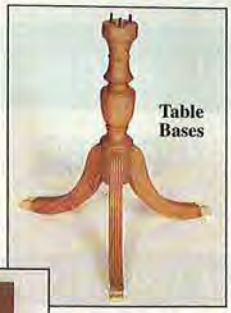

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Look over the prize list on the facing page. Check out how many ways you can win—either as a hobbyist woodworker or a professional. There are even categories for a group effort, so come on woodworking clubs and shop classes, start building!

But don't forget, Build-A-Toy is much more than a contest.

CRAFT A TOY FOR JOY

When you enter *WOOD* magazine's Build-A-Toy contest, you automatically contribute to the U.S. Marine Corps Reserve's caring program, Toys for Tots. You'll receive a commemorative "I crafted a Toy for Joy" sticker to prove it. That's because all the handcrafted entries are sold at auction to raise money for the Marines to buy many, many more toys. Last year, at the magnificent Grand Palace Theater in Branson, Missouri, Build-A-Toy entries at the Crafted for Joy toy auction raised over $22,000 to purchase gifts for less-fortunate children at Christmas! That proves that you, as a hobbyist or professional, can really make a difference by lighting up some child's eyes. But there's more.

WOODEN TOYS ON DISPLAY

So that others can appreciate the craftsmanship and care that goes into building a toy-contest entry, your toys go on display during the fall in and around Des Moines, Iowa (our world-wide headquarters). Then comes November, a very significant time for deserving children.

TOYS FOR TOTS, BY YOU

A month or so before Christmas, the toys you entered in the Build-A-Toy contest go up for auction. What excitement there is! One-of-a-kind wooden toys sell for up to hundreds of dollars each as eager bidders vie for the examples of your craftsmanship. And if your entry brings $100 or more, we'll let you know with a personal letter that you can display with pride.

So set aside time right now to plan and build your toy-contest entry. Read the rules and guidelines shown at right. Get your entry in by February 1, 1995, and then proudly say, "I CRAFTED A TOY FOR JOY!"

Crafted for Joy

WOODEN TOY AUCTION *for* TOYS FOR TOTS

THROUGH TOYS FOR TOTS, WITH NEARLY $18,000 IN TOOLS AND SUPPLIES TO WIN!

SKIL DREMEL HEGNER Precision Scroll Saws Milwaukee AMERICAN TOOL COMPANIES, INC.

WOOD® MAGAZINE'S 1995 BUILD-A-TOY CONTEST PRIZES & SPONSORS

GRAND PRIZE (ORIGINAL DESIGN)

Professional: Your choice of Bosch power tools totaling $2,000. Woodworking clamps totaling $300 from American Tool
Hobbyist: A tablesaw, jointer, planer, and bandsaw from Grizzly valued at $2,000. Woodworking clamps totaling $300 from American Tool

FIRST PLACE (ORIGINAL DESIGN)

Professional: Your choice of $1,500 in Delta power tools
Hobbyist: Your choice of $1,500 in Delta power tools

SECOND PLACE (ORIGINAL DESIGN)

Professional: From AMI, a Hegner Multimax 18V scrollsaw worth $1,000
Hobbyist: A shopful of Craftsman benchtop power tools worth $1,000

THIRD PLACE (ORIGINAL DESIGN)

Professional: Your choice of Skil power tools totaling $500
Hobbyist: Your choice of Skil power tools totaling $500

HONORABLE MENTIONS (3, ORIGINAL DESIGN)

Your choice of $300 in merchandise from Stanley's Fine Woodworking & Speciality Tools catalog

CITATIONS (All designs)

Best Use of Wood
Professional: $250 in Constantine's merchandise
Hobbyist: $250 in Formby's finishing supplies
Best Clear Finish
Professional: $250 in Formby's finishing supplies
Hobbyist: Campbell Hausfeld HVLP sprayer
Best Action Toy
Professional: $250 in Dremel tools
Hobbyist: $250 in Dremel tools
Best Painted or Dyed Finish
Professional: $250 in Trend-Lines merchandise
Hobbyist: $250 in merchandise, The Woodworkers' Store
Best Doll Accessory
Professional: $250 in merchandise, Meisel Hardware Specialties
Hobbyist: $250 in merchandise, Meisel Hardware Specialties
Best Educational Toy
Professional: $250 in Dremel tools
Hobbyist: $250 in Dremel tools
Best Pull Toy
Professional: $250 in Dremel tools
Hobbyist: $250 in Dremel tools
Best Transportation Toy
Professional: $250 in Crafts Supplies USA merchandise
Hobbyist: $250 in Toys and Joys merchandise

1995 RULES

1. Projects must fit into a box no larger than 2' x 2' x 2'. The primary material should be wood but may incorporate other materials.
2. Please follow Consumer Product Safety Commission guidelines: nontoxic wood finishes only; no parts smaller than 1 1/4" square on toys for children under three years of age; no sharp corners or points; pull strings longer than 12" should not have beads or other attachments that could tangle and form a loop.
3. Entries must be received by February 1, 1995. All entries must be postpaid; collect entries will be refused. Attach an entry label, photocopy of an entry label or a 31/2" x 5" card with your name and address to each toy.
4. Woodworkers who build toys from existing plans will be eligible for Citation prizes only. Woodworkers who build their own original designs will be eligible for all prizes.
5. Entry constitutes permission to use winner's name, hometown and photograph for promotional purposes. Employees and family members of Meredith Corporation, their affiliates and subsidiaries are ineligible. Void in Quebec.
6. Winners will be selected and notified by mail on or about April 15, 1995, and will receive the prize directly form the manufacturer/distributor. Value of prize is suggested retail price. For a list of winners, send a separate , self-addressed stamped envelope to BUILD-A-TOY, 1912 Grand Avenue, Des Moines, IA 50309-3379.
7. Meredith Corporation will donate all entries or auction money received from entries to the U.S. Marine Corps Reserve Toys for Tots program.
8. **For woodworkers who enter their toy as an original design:** Toy must be your own original design. A different approach to an existing toy would qualify. Please do not enter toys with only subtle changes from published patterns.
9. A panel of representatives from the U.S. Marine Corps Reserve, Meredith Corporation and woodworking experts will judge the toys on child's appeal, craftsmanship, originality, and durability. The panel's decision will be final.
10. Professional woodworkers include woodworking teachers and anyone earning an income by selling wooden items.

SPECIAL AWARDS

Best Toy from a Woodworking Club
$250 in Leichtung merchandise; Milwaukee Tool $500 miter saw; $250 in Behlen's wood-finishing products

Best Toy from a Shop Class
$250 in Delta Tools; $250 in 3M supplies; $250 in Behlen's wood-finishing products

WOOD® magazine's 1995 BUILD-A-TOY™ Competition

WOOD® magazines 1995 BUILD-A-TOY™ Competition

There is no limit to the number of entries. Please provide the following information for each entry submitted.

My entry is: ❑ Original design* ❑ Built from plans
My skill level is: ❑ Professional ❑ Home Hobbyist
My Affiliation ❑ WW Club ❑ Shop Class

*For Original Design entries: I certify that I have designed and built this toy myself. Should my entry win, I agree to cooperate with WOOD magazine to supply builder's notes and a bill of materials for publication.

Signature _____

Date _____

Name _____

Address _____

City _____

State _____ ZIP _____

Phone (_____) _____

Send toys to: 1995 BUILD-A-TOY, WOOD magazine, 1912 Grand Avenue, Des Moines, IA 50309-3379

1995 BUILD-A-TOY ENTRY DEADLINE: FEBRUARY 1, 1995

1994 BUILD-A-TOY CHAMPIONS

Continued from page 73

Banks, watermelon trains, doll houses, dog sleds, airplanes, golf carts—the sixth annual Build-A-Toy contest had them all. Here's the complete list of winners (see photos of all the top finishers on *page 72*).

Hobbyist Division

Grand Prize. $2,000 in Grizzly stationary power tools. Matt Drown, Slayton, Minn.; gambler gumball dispenser.

First Place. $1,500 in Delta power tools. Peter F. Friedel, Baltimore, Md.; semi tanker truck.

Second Place. $1,000 in Craftsman benchtop power tools. Larry Weaver, Petersburg, W. Va.; boxed train set.

Third Place. $500 in Skil power tools. Robert Elsmore, Barberton, Ohio; working carousel.

Best Use of Wood. $250 in Formby's finishing supplies. Robert H. Drumm, San Antonio, Texas; Ford Bronco.

Best Clear finish. Campbell Hausfeld HVLP sprayer. James Weber, Fayetteville, Ohio; figured walnut/maple biplane.

Best Action Toy. $250 in Dremel tools. Jack Clarke, White Rock, British Columbia, Canada; teeter-toter with marbles.

Best Painted or Dyed Finish. $250 in merchandise from The Woodworkers' Store. William V. Trumble, Grants Pass, Ore.; purple roadster w/trailer.

Best Doll Accessory. $250 in merchandise from Meisel Hardware Specialties. Jim Christian, Vancouver, Wash.; doll house

Best Educational Toy. $250 in Dremel tools. Jack Tumath, Prudenville, Mich.; crayon dispenser.

Best Pull Toy. $250 in Dremel Tools. Leo Lohman, Golden, Colo.; walnut/oak cricket.

Best Transportation Toy. $250 in merchandise from Toys and Joys. John W. Comer, Yakima, Wash.; toddler ride-a-plane.

Professional Division

Grand Prize. $2,000 in Bosch power tools. Mike Jagielo, Almond, Wis.; spider pull toy.

First Place. $1,500 in Delta power tools. Mike Schaffner, Owatonna, Minn.; Caterpillar front-end loader.

Second Place. $1,000 Hegner Multimax scrollsaw from AMI. Neil Seely, Rochester, N.Y.; flatbed accident recovery truck.

Third Place. $500 in Skil power tools. Ken Prill, Chippewa Falls, Wis.; spalted-maple boxed tea set.

Best Use of Wood. $250 in Constantine's merchandise. Lavern Weinschenk, Jr., Davenport, Ia.; Discovery space shuttle.

Best Clear Finish. $250 in Formby's finishing materials. George F. Campbell, Owensboro, Ky.; B-25 bomber.

Best Action Toy. $250 in Dremel tools. Joe Simboli, Cheyney, Pa.; chickey-picky rocking toy.

Best Painted or Dyed Finish. $250 in Trend-Lines merchandise. Robert Trace, Toledo, Ohio; watermelon train set.

Huey Powe, Sr., of Slidell, La., hand-carved this pickup from one piece of basswood, then accented it with walnut. The boat has removable parts, too. Because of this woodworker's sudden death, it was released from competition and returned to his family.

Best Doll Accessory. $250 in merchandise from Meisel Hardware Specialties. Thomas Coates, Butler, Pa.; walnut living room furniture.

Best Educational Toy. $250 in Dremel tools. Joe Simboli, Cheyney, Pa.; castle bank.

Best Pull Toy. $250 in Dremel tools. Joe Geyser, Antioch, Calif.; golf pull cart with clubs.

Best Transportation Toy. $250 in Crafts Supplies USA merchandise. Mark Turner, Mt. Village, Alas.; Eskimo dog sled.

Special Awards

Best Toy from a Woodworking Club.
$250 in Leichtung merchandise, $500 miter saw from Milwaukee Tool. Valley Woodworkers of West Virginia, Scott Depot, W. Va.; red oak doll cradle.

Best Toy from a Shop Class.
$250 in Delta tools, $250 in 3M supplies. Licking Valley High School, Newark, Ohio; misc. wooden toys & games (12 items in all).

Crafted for Joy Toy Auction Money Raisers

On December 14, 1993, at Branson, Missouri's Grand Palace Theater, a crowd of eager bidders assembled to raise money for the U. S. Marine Corps Reserve's Toys for Tots. That evening, they spent more than $22,000 on toys entered in WOOD® magazine's 1993 Build-A-Toy contest.

Contest coordinator Pete Stephano and editor Larry Clayton admire the craftsmanship of a toy television-video camera.

Readers' entries that brought $100 or more were notified by letter. Here are some of the toys that exceeded $100 in bidding:

$3,100, miniature pool table,
Brian J. Merdian, Herminie, Penn.

$1,100, walnut Ford pickup truck,
Roger Zack, Bloomington, Minn.

$1,000, jumping jalopy car,
George Cole, Seqium, Wash.

$700, pickup truck with canoe,
Jerry Eaton, Eau Claire, Wis.

$700, make-a-face puzzle game,
William T. Perry, Harmony, Penn.

$600, maple and walnut float plane,
Larry J. Weaver, Petersburg, W. Va.

$550, tow truck rider,
Scott Robertson and Michael Lewis, Waltham, Mass.

$525, mini baby cradle,
John Saggio, Little Neck, N.Y.

$450, Walnut and maple royal horse carriage,
Perry Mercurio, Vancouver, Wash.

$450, blue marine-life chair,
Kyle Scarborough, Odessa, Texas

$425, walnut dachshund pull toy,
Neil Seely, Rochester, N.Y.

$400, 1930s coupe,
Ron Schwartz, Monroe, Wash.

Photographs: John Hetherington

Top Toy Auction Money Raiser

A few folks at the 1993 Crafted for Joy toy auction got into a bidding war over the miniature pool table finely crafted by Brian J. Merdian, of Herminie, Pennsylvania. When the bidding ended, it sold for $3,100! So, as top money raiser, Brian wins a Hawk scrollsaw from RBI worth $1,000.

ORDER 1-800-328-0457 MAIL ORDER HOURS M-F 7:00-5:30 C.S.T. SAT 8:00-1:00

DELTA TOOLS

Model	Description	List	Sale
23-700	Wet/Dry Grinder	234	158
23-680	6" Bench Grinder 1/4 HP	86	75
11-950	8" Drill Press	199	138
31-050	1" Belt sander 2.0 amp	104	78
31-460	4" Belt/Disc Sander	198	129
31-340	1" Belt/8" Disc Sander	268	204
40-560	16" 2 speed Scroll Saw	266	178
11-990	12" Bench Drill Press	276	195
11-090	32" Radial Bench Drill Press	399	305
43-355	3/4" Shaper 1-1/2 HP	964	759
43-505	1/2" Bench Router/Shaper	399	285
22-540	**12" Bench Top Planer**		389
36-220	10" Compound Mitre Saw	350	229
28-180	Bench Band Saw	232	159
28-190	NEW 12" Band Saw	465	389
40-640	20" Bench Scroll Saw	466	295
37-070	NEW 6" w/spd Bench Jointer	337	249
14-650	Hollow Chisel Mortiser	668	289
46-700	12" Wood Lathe	548	445
33-990	10" Radial Arm Saw	818	639
37-280	6" Motorized Jointer	488	395
50-179	3/4 HP 2 stage Dust Collector	483	345
33-055	8-1/4" Sawbuck comp w/legs	865	615
34-330	8-1/4" Table Saw 13 amp	343	245
32-100	Stationary Plate Jointer	645	255
36-040	8-1/4" Compound Mitre Saw	224	149
34-915	30" Unifence	385	229
34-897	50" Delta Unifence	525	285
36-755	10" Tilt Arbor Saw	1264	969
34-444	Contractors Table Saw	812	619
17-900	16-1/2" Floor Drill Press	462	399
33-060	"Sidekick" Miter Saw	510	375
14-070	14" Floor Drill Press	450	349
37-190	NEW 6" Deluxe Jointer	554	479
36-275	NEW 8-1/4" Builders Saw	444	265
36-210	NEW 10" Compound Mitre Saw	438	255
36-070	NEW 10" Mitre Saw	284	169

The following Delta Tools have Rebates !
Rebates start 9-15-94

$50 Rebate

28-283	14" Band Saw w/enc. stand	910	745
34-445	34-444 Saw w/30" Unifence	1200	775

$75 Rebate

22-661	13" Planer w/ 2HP motor	1513	1189
37-154	DJ15 6"Jointer w/3/4HP motor	1451	1165

MILWAUKEE TOOLS

6527	NEW Sawzall with case	320	172
6528	above Sawzall w/wired cord	316	172
6126	NEW 6"Random Orbit Sander	205	124
0399-1	12V cordless Drill Kit comp	315	172
0402-1	**above Drill w/kyls chuck & 2 batt**		174
0395-1	9.6V cordless Drill with case	290	158
0224-1	3/8" Drill 4.5 amp magnum	227	124
0234-1	1/2" Drill 4.5A mag 0-850 rpm	237	124
0244-1	1/2" Drill 4.5A mag 0-600 rpm	237	124
0222-1	3/8" Drill 3.5 amp 0-1000 rpm	198	109
0228-1	3/8" Drill 3.5 amp 0-1000 rpm	195	109
0375-1	3/8" close quarter Drill	237	129
0379-1	1/2" close quarter Drill	268	152
6546-1	cdls Scrwdvr 200 & 400 rpm	141	82
5399	1/2" D-hdle Hammer Drill Kit	332	194
6750-1	Drywall Gun 0-4000 5 amp	171	94
6507	Original SawZall with case	264	144
8977	Variable temp. Heat Gun	131	79
5397-1	3.8" var. spd Hammer Drill Kit	255	142
5371-1	1/2" var. spd Hammer Drill Kit	340	188
3107-1	1/2" v/spd right angle Drill Kit	399	219
6754-1	Drywall Gun 0-4000 5.4 amp	196	112
3300-1	1/2" var. spd right angle Drill	356	194
5680	Router 2 HP - 12 amp	362	198
0235-1	1/2" Drill w/keyless chuck	237	128
6142	4-1/2" Grinder w/cse & access	208	124
6749-1	Drywall Gun 0-2500 5.4 amp	218	124
6365	7-1/4" Circular Saw 13 amp	218	122
6366	6365 w/fence & carbide blade	228	127
6368	6365 w/Ince,carb. blde,& cse	249	139
6377	7-1/4" Worm Drive Saw	330	184
6256	Top Handle Jig Saw	264	148
6490	10" Mitre Saw	444	255
6491	6490 w/ carbide blade & bag	532	278

FREUD CARBIDE TIPPED SAW BLADES
5/8" Bore - Industrial Grade

Item	Description	Teeth	List	Sale
LU72M010	Gen Pur. A.T.B. 10"	40	69	39
LU82M010	Cut-off 10"	60	93	49
LU84M011	Comb 10"	50	78	42
LU85M010	Super Cut-off 10"	80	115	59
LM72M010	Ripping 10"	24	69	38
LU73M010	Cut off 10"	60	84	45
LU87M010	Thin Kerf 10"	24	72	39
LU88M010	Thin Kerf 10"	60	88	45
LU98M010	Ultimate 10"	80	128	68
LU91M010	Compnd Mitre 10"	60	88	54
F410	NEW Quiet Blade 10"	40	95	49
F810	NEW Quiet Blade 10"	80	135	74
TK303	7-1/4" Finishing	40	38	22
TK906	10" Combo	50	53	29
SD306	6" Dado - Carbide		215	112
SD308	8" Dado - Carbide		230	119
SD506	6" carbide w/case & shims		292	155
SD508	8" carbide w/case & shims		344	179
F0	1-3/4" x 5/8" Biscuit 1000 Qty		43	29
F10	2-1/8" x 3/4" Biscuit 1000 Qty		43	29
F20	2-3/4" x 1" Biscuit 1000 Qty		45	29
FA	Assorted Biscuits 1000 Qty		45	29
FB100	16 piece Forstner Bit Set		338	184
94-100	5 pc. Router Bit Door System		320	159
TR215	NEW 10" Slide Cmpd Mitre Saw		688	359
JS102	NEW Biscuit Jointer w/adj.fnc&cs		355	188

These FREUD Tools have a $30.00 Rebate !
Price shown is before rebate.

FT2000E	3-1/4 HP v/sp Plunge Router	410	205
JS100	Biscuit Jointer with case	334	164

MAKITA TOOLS

Model	Description	List	Sale
6070DW	3/8" v/spd Reverse Drill 7.2V	128	64
6172DWE	3/8" v/spd Drill Kit w/ 2 batt	220	109
5090DW	3-3/8" Saw Kit 9.6 volt	270	145
ML900	Incandescent Flashlight 9.6V	Sale	37
DA391DW	3/8" angle Drill Kit 9.6 volt	312	169
6012HDWE	2 speed Drill Kit w/2 batt.	243	129
6093DWE	6093DW Drill Kit w/2 batteries	270	139
6095DWE	**6095DW Drill Kit w/2 batteries**		139
6201DWE	NEW 9.6V Drill Kit w/2 batt	298	158
6211DWE	12V Drill Kit with 2 batteries	330	175
632007-4	9.6 volt Battery	47	30
632002-4	7.2 volt Battery	39	28
5007NBA	7-1/4" Saw w/electric brake	263	129
5008NBA	8-1/4" Saw w/electric brake	346	195
B04510	1/4 sheet Pad Sander	106	59
9900B	3" x 21" Belt Sander w/bag	344	169
9924DB	3" x 24" Belt Sander w/bag	329	178
4301BV	Orb. var. spd Jig Saw 3.5A	292	149
JR3000V	var. speed Recip Saw w/case	252	135
LS1020	10" Mitre Saw 3.5 amp	630	355
9820-2	Blade Sharpener	394	199
N1900B	3-1/4" Planer with case	244	129
9514B	4" Disc Grinder 4.6 amp	111	59
B04550	1/4 sheet Pad Sander w/bag	98	54
DA3000R	3/8" Angle Drill	314	179
2708W	8-1/4" Table Saw	585	298
2711	10" Table Saw with brake	1067	565
6404	3/8" Drill Rev. 0-2100 rpm	112	58
6510LVR	3/8" Drill Rev. 0-1050 rpm	168	93
6820V	0-4000 rpm Drywall Gun	171	92
6013BR	1/2" Drill Rev. 6 amp	280	139
9401	4" x 24" Belt Sander w/bag	378	215
4302C	var. speed Orbital Jig Saw	351	199
5077B	7-1/4" Hypoid Saw	281	155
5007NB	7-1/4" Circular Saw 13 amp	232	124
5007NBK	5007NB Saw w/ plastic case	Sale	129
2012	12" Portable Planer	959	539
LS1011	10" Slide Compound Saw	946	539
3612BRA	3 HP Plungr Router w/ brake	524	175
LS1211	New 12" Slide Cmpd Saw	1550	865

SIOUX TOOLS

8030	New 3/8" var/spd Drill	250	145
8000	3/8" var/spd close qtr Drill	201	125
690	5" Air Random Orbit Sander	139	132

SENCO AIR NAILERS

SFN1	Finishing Nailer 1" - 2"	448	298
SN325	Nailer 1-7/8" - 3-1/4"	665	419
SLP20	New Pinner w/cse 5/8 -1-5/8"	399	269
SKS	Stapler 5/8" - 1-1/2"	390	269
SN70	Fram. Nailer Clip Hd 2"-3-1/2"	690	475
SN60	Fram. Nailer-Full Hd 2"-3-1/2"	638	445
SFN40	NEW Finish Nailer 1-1/4 - 2-1/2"	571	385

BOSTITCH AIR NAILERS

N80S-1	Stick Nailer ..... Super Sale		348
RN45	Coil Roof Nailer 3/4 - 1-3/4"	845	425
N60FN-2	Finishing Nailer	650	335
T31	Brad Nailer	281	145
CWC100	1 HP Pancake Compressor	463	289

SKIL SIZZLERS

77	7-1/4" Worm Drive Saw	257	144
2735-04	12 volt cordless Drill Kit	249	144
2736-04	2735-04 with keyless chuck	269	145
1605-02	Biscuit Joiner w/case	221	129
3400	10" Table Saw - Bench Top	270	185

PANASONIC CORDLESS

EY6205EQK Same as EY6205BC but comes with **Ironman** battery 368 192

EY6207BC NEW 12 volt 1/2" Drill w/keyless chuck var. speed w/15 min. charger & case 420 222

EY6282EQK Var. spd 9.6 volt Drill with 15 min charger, case & NEW **Ironman** battery 315 169

EY62821DKW 9.6 volt Drill Kit w/2 batt. 395 162

NEW PREDATOR DRILLS

EY6181CRKW NEW 9.6V Compact Drill Kit w/2 batt - 10% more pwr than EY6282IDKW305 158

EY6100CRKW NEW 12 volt Drill Kit with 2 batteries, 1 hour charger, & case 358 185

EY6100CQKW Same as **EY6100CRKW** but has 15 minute charger 420 198

EY6100EQK NEW 12 volt Drill kit with NEW **Ironman** battery, 15 min. charger, & cse 375 199

EY6100EQKW Same as **EY6100EQK** but w/ 2 **Ironman** batteries.. 473 225

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0626SK
1/4" Crown Stapler 3/8"-1"
List 194 Sale 109

0635SK
1/4" Crown Stapler 1/2"-1-3/8"
Same as Senco SKS
List 310 Sale 175

EZ-1
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DW945K-2	3/8"12V cdls Drill Kit w/2 batt	309	169
DW944K-2	3/8"9.6V cdls Drill Kit w/2 batt	283	165
DW610	1-1/2 HP 2 handle Router	274	154
DW411	1/4 sheet Palm Sander, 1.7 amp	97	58
DW1003	3/8" Drill, 4 amp,0-2500 rpm,rev.	118	68
DW682K	NEW Biscuit Joiner with case	429	238
DW705	12" Compound Mitre Saw	706	379
DW615	NEW 1-1/4 HP Elec. Plge Router	290	158
DW625	**NEW 3 HP var. spd Plunge Router**		269
DW675K	NEW 3-1/8" Planer with case	289	164
DW431	NEW 3 x 21 v/spd Belt Sander	331	184

NEW DEWALT CORDLESS DRILLS

DW952K	3/8" v/spd incl. one 9.6V batt.	280	159
DW953K	3/8" v/spd incl. one 12V batt.	306	175
DW962K-2	3/8"v/sp incl. two 9.6V XRbatt	324	179
DW972K-2	3/8"v/sp incl. two 12V XRbatt	352	189
DW991K	3/8"v/sp incl. one 14.4V XRbatt	370	199

Above drill kits come w/charger & steel case!

PORTA NAILER

401	Porta Nailer complete	265	205
501	Face Nailer complete	265	205

WERNER LADDERS

6204	4' Fiberglass	179	65
6205	5' Fiberglass	199	75
6206	6' Fiberglass	225	82

HITACHI TOOLS

F1000A	12" Planer/6" Jointer	2970	1559
P12R	12-9/32" Planer	1470	789
P12RA	Planer/Joiner	1940	989
C8FB	8-1/2" Slide Compound Saw	1400	599
G12SA	4-1/2" Grinder 6.9 amp	160	89
DS10DVAK	NEW 12V Cordless Drill Kit	393	199
NR83A	Fram Nailer 2 - 3-1/2 Full Head	700	385
NR83AA	Framing Nailer 2 - 3-1/2 Clip Head	750	414
NT65A	16 ga. Brad Nailer 1 - 2-1/2	610	328
NV45AB	Coil Roofing Nailer 7/8 - 1-3/4	750	409
NV83A	Coil Nailer 2 - 3-1/4	750	415

BIESEMEYER FENCES

B-50	50" Commer. Saw Fence	345	298
T-SQUARE 52	52" Homeshop Fence	279	238
T-SQUARE 40	40" Homeshop Fence	259	208
T-SQUARE 28	28" Homeshop Fence	249	198

JORGENSEN ADJUSTABLE HANDSCREWS

Item#	Jaw Length	Open Cap	List	Sale	Box of 6
#0	8"	4-1/2"	19.76	11.75	58.00
#1	10"	6"	22.63	12.50	68.00
#2	12"	8-1/2"	25.95	14.50	78.00
#3	14"	10"	32.88	18.00	99.00
#4	16"	12"	42.76	23.95	139.00

JORGENSEN STYLE 37 2-1/2"Throat 1/4"x3/4"

Item#	Jaw Length	List	Sale	Box of 6
3724	24"	14.25	7.99	42.50
3730	30"	15.88	8.85	47.75
3736	36"	17.36	9.99	53.95

PONY CLAMP FIXTURES

Model		List	Sale	Lots of 12
50	3/4" Black Pipe Clamps	14.87	7.90	89.95
52	1/2" Black Pipe Clamps	12.40	6.80	72.95

BOSCH

Model	Description	List	Sale
1587VS	NEW Top Hand "CLIC"Jig Saw	292	149
1584VS	NEW Barrell"CLIC"Jig Saw	285	149
Bosch Metal Case for above Jig Saws		34	32
Bosch 30 blade assortment for Jig Saws		27.99	
1942	Heat Gun 600° - 900°	125	78
1272D	3" x 24" Belt Sander with bag	375	204
1273D	4" x 24" Belt Sander with bag	380	208
11-212VSR	Bulldog 3/4"SDS Rtry Drill	390	209
1347AK	4-1/2" Grinder w/cs & access.	185	109
1348AE	5" Grinder 8.5 amp	225	129
1194VSR	1/2" var. speed Hammer Drill	282	149
1194VSRK	above Hammer Drill w/case	313	169
1608	5.6 amp Laminate Trimmer	168	95
1609K	Lam Installers Kit with 1609	343	184
1609KX	Deluxe Installers kit	405	228
1604A	1-3/4 HP 2 Handle Router	250	139
1604AK	same as above w/cse & acc	318	185
1606A	1-3/4 HP D-handle Router	295	185
3258	3-1/4" Planer w/blade guard	247	155
3258K	3258 Planer with steel case	273	169
3270DVS	3 x 21v/spd belt sander w/ bag	270	165
1273DVS	var. spd 4" x 24" Belt Sander	415	219
1614	NEW 1HP Plunge Router	245	149
1614EVS	NEW 1-1/4HP v/spd Plge Rtr.	283	155
1613	NEW 1-3/4 HP Plunge Router	316	169
1613EVS	**NEW 2HP v/sp Plunge Router**		188
1615	NEW 3 HP, Plunge Router	430	259
1615EVS	NEW 3 HP v/spd Plge Router	505	278
1632VSRK	Recip Saw 8.4A orb-v/spd	225	154
3050VSRK	9.6V cdls v/sp Drill Kit comp	288	149
3051VSRK	3050VSRK w/keyless chuck	299	149
1370DEVS	6" Random Orbit Sander	427	224
3283DVS	5" Random Orbit Sander	169	98
3283DVSK	3283DVS Kit complete	199	118
B1650K	NEW Biscuit Joiner	289	165
B7000	NEW Corner Detail Sander	122	75
B4050	NEW In Line Jig Saw	199	119

ELU BY BLACK & DECKER

Model	Description	List	Sale
3375	3-1/8" Univ. planer 7 2 amp	329	159
3380	Biscuit jointer with case	569	185
3339	NEW 3 HP v/sp Plunge Router	511	269

BLACK & DECKER

1166	3/8" Drill 0-2500 rpm 4 amp	118	65
79-034	Workmate 400	181	109
2694	7-1/4" Super Sawcat w/case	285	152
2695	8-1/4" Super Sawscat w/case	328	162

DAVID WHITE

LP6-20	Sight Level package - 20x	310	195
LP6-20XL	LP6-20 w/9056 tripod & 7620 rod	359	259
L6-20	Meridian Level - 20x	290	188
LT8-300	Level Transit - 26x	695	445
LT8-300P	above Level w/optical plum	821	518
LT6-900	Level Transit - 20x	389	249
ALT6-900	Automatic Level - Transit -18x	638	409
ALTP6-900	above Level w/tripod & rod	708	469
ALP6-18HD	above Level w/tripod & rod	570	375
ML100I	NEW Laser Level	1099	945
ML100	NEW Laser Level w/detector.	1249	1075

RYOBI SPECIALS

TS-254	10" Mitre Saw	440	209
RE600	3 HP Plunge Router	500	235
BE321	3" x 21" var. spd Belt Sander	310	139
TFD222VRK	12V cordless Drill Kit	365	155
TFF100	Flashlight uses 7.2,9.6,12v battery	19.95	
JM100K	Biscuit Jointer w/case	475	218
BT3000	10" Table Saw with stand	1125	529
TSS220	8-1/2" Slide Comp. Saw	966	445
DS1000	NEW Detail Sander	90	44
AP12	NEW 12" Bench Planer	884	399
RA202	NEW 8-1/4" Bench Radial Saw	800	389
BS900	NEW 9" Bench Band Saw	340	174
OSS450	NEW Oscilating Spindle Sander	340	174

LAMELLO BISCUIT JOINTERS

TOP 10	"Simply the Best"	699	538
STANDARD 10	"Professionals Choice"	499	399
Msx636	FEIN Triangle Sander Kit	Sale	185
LPN672	PONY Air Palm Nailer w/glove	Sale	94.99

QUAL-CRAFT PRODUCTS

2200	Pump Jack	79	58
2201	Pump Jack Brace	30	20
2203	Pump Jack guard rail holder	31	21
2204	Workbench & rail holder combo	53	39

Buy any 6 (can be assort.) deduct 10%

2601	Wall Jack	167	108

Lots of 4 deduct additional 10%

PORTER CABLE

690	1-1/2 HP Router 8 amp	260	138
691	1-1/2 HP Router D-handle	285	155
695	1-1/2 HP Router/Shaper	400	223
696	HD Shaper Table	230	129
351	3" x 21" Belt Sander w/o bag	280	154
352	3" x 21" Belt Sander with bag	290	159
360	3" x 24" Belt Sander with bag	365	194
361	3" x 24" Belt Sander w/o bag	345	189
362	4" x 24" Belt Sander with bag	380	205
363	4" x 24" Belt Sander w/o bag	360	195
315-1	7-1/4" Top Hdle Circular Saw	225	118
9315-1	315-1 comp. w/cs & carb bld.	255	139
97751	1/2" v/spd Hammer Drill w/cse	270	155
9118	Porta Plane Kit 7 amp	390	215
505	1/2 sheet Pad Sander	230	128
6611	3/8" var. speed Drill 5.2 amp	220	125
6614	1/2" var. speed Drill 0-750 rpm	230	128
6615	7514 with keyless chuck	230	128
7549	Top handle Jig Saw 4.8 amp	270	135
330	Speed Block Sander 1/4 sheet	110	60
555	Plate Biscuit Jointer with case	320	159
556	**555 jointer w/5556 tilt fence**		174
345	6" Saw Boss 9 amp	190	104
9345	345 comp. w/cse & carb blde	220	124
9647	TIGER CUB Recip. Saw	210	119
9637	Full var/spd Recip Saw 8 amp	270	148
7519	3-1/4 HP Router 2 Handle	445	239
7518	3-1/4 HP 5 speed Router	510	275
7538	3-1/4 HP Plunge Router	445	239
7399	5.6 amp Drywall Cutout Unit	140	84
7310	5.6 amp Laminate Trimmer	165	95
97310	Laminate Trimmer Kit comp	360	198
7334	5" Random Orbit Sander	225	122
7335	5" var. spd Rndm Orbit Sndr	245	132
7336	6" var. spd Rndm Orbit Sndr	250	137
73333	Dust Collection system	31	24.50
693	1-1/2 HP Plunge Router Base	320	174
6931	Plunge Router Base	125	77
7539	3-1/4HP v/spd Plunge Router	510	275
9852	12V 3/8"Drill w/cse 0-1000rpm	280	154
9853	9852 with keyless chuck	280	154
9855	12V 1/2" 2 spd.v/sp Drill w/cs.	335	188
8500	12V battery for above drills	Sale	45

New Tools by Porter Cable

9840	9.6V Drill Kit with 2 batteries	289	164
332	Palm Grip Rndm Orbit Sander	120	69
333	above Sander with dust bag	135	75
334	333 Sander with PSA pad	135	74
340	1/4 Sheet Orb Sndr w/dust p/u	89	55
352VS	3x21 Belt Sander w/bag v/spd	305	169
7116	24" Omni Jig	535	294
550	Pocket cutter with case	330	179
310	Production Laminate Trimmer	250	145
7700	10" "Lazerloc" Mitre Saw	634	344
347	7-1/4" "Framers" Circ Saw	225	129
743	347 Saw - left hand version	225	129
447	347 Saw with brake	245	139

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FINISHING TOUCHES

You can help the butternut

A cousin to the black walnut, the butternut tree (*Juglans cinerea*) has long provided a favorite wood for carvings. But in the past 15 years, the tree has declined in numbers up to 80 percent in some parts of the Great Lakes States. The culprit is a fungus that chokes off the trees' food and water supplies. There's time to save the species, though, say officials of the U. S. Forest Service in St. Paul, Minnesota.

Researchers there want to locate healthy butternuts that grow within 100' of infested butternuts. This will give them access to disease-resistant trees for propagation. To help, write: Forest Disease Project, USDA Forest Service, 1992 Folwell Ave., St. Paul, MN 55108.

Arrowmont symposium honors Osolniks

Berea, Kentucky woodturner Rudy Osolnik, a living legend among his peers, has for decades been at the forefront of turning both in this country and abroad. To honor him and Daphne, his wife, for their advancement of the arts and crafts, the Friends of the Osolnik Family plan to establish a scholarship fund at the Arrowmont School of Arts and Crafts in Gatlinburg, Tennessee.

To launch the endowment fund, a woodturning symposium will be held at Arrowmont October 20 to 24. Corporations and craftsmen have donated turned objects, tools, and other woodworking equipment for a fund-raising raffle and an auction. Instructors also have agreed to teach workshops without pay. For more information on the event, contact Dave Hout, 4124 Lake Vista Rd., Akron, OH 44319.

SEARS TO THE RESCUE

Roger Zack, of Bloomington, Minnesota, was elated in March, 1993, when he was notified that his walnut-and-maple 1940 Ford pickup truck model won the Best-Use-of-Wood award in that year's Build-A-Toy® contest. But months and months went by without his receipt of the prize.

Finally, contest coordinators discovered that the prize sponsor was unable to deliver as promised—a lack of communication. So, we asked Roger what he wanted instead. His answer: a Sears Craftsman tablesaw. Today, Roger is a happy woodworker because Sears kindly stepped forward to provide him with one. Thanks, Sears!

Minnesotan Roger Zack got what he wanted for a prize in the 1993 Build-A-Toy contest—a Sears Craftsman Contractors Model tablesaw.

TOYS FOR TOTS CLEANS HOUSE

For *WOOD*® magazine readers questioning the operation and viability of the Toys for Tots Foundation in handling funds raised by the Build-A-Toy contest and others to benefit needy kids, please read the following.

"I would like to say that 100 percent of the money raised by the Build-A-Toy auction is in a restrictive account to be used by Marine Corps Reserve units for the purchase of toys," writes William J. Grein, Major USMC (Ret), Vice President of Operations, Toys for Tots Foundation, Quantico, Virginia. Major Grein then goes on to explain that any past irregularities with the program did not involve monies raised by efforts such as the Build-A-Toy auction, and that all problems have been corrected. "As a matter of fact, 90 percent of every dollar raised in the most recent fiscal year went for the purchase of toys and support materials for Marine Reserve units . . . that is an excellent percentage for any charity."

Consequently, the editors of *WOOD* magazine are satisfied with the present performance of the Toys for Tots Foundation and the USMC Reserve, and will continue to raise money for their activity through the annual auction of Build-A-Toy contest entries (which, to date, has provided nearly $60,000 in funds and/or merchandise). The 1994 auction will take place on November 16 at Capitol Square in downtown Des Moines, Iowa. Watch this page next month for more details.

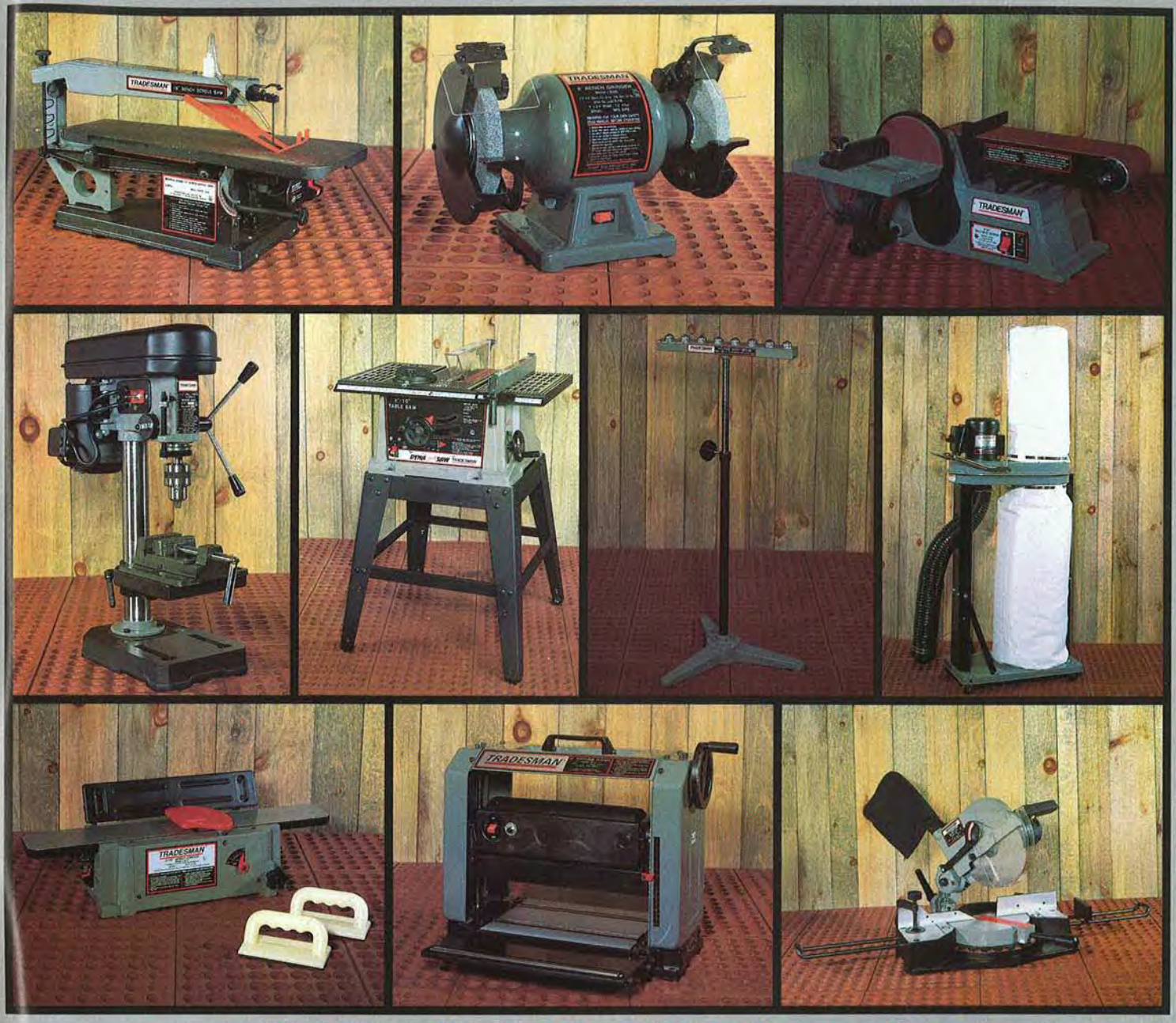
Woodworking goes direct mail

On September 15, you'll be able to view, then buy, the offerings of some 160 woodworkers from all across North America, right from your newsstand. That's when our brand new publication *American Woodcrafts Gallery*™ goes on sale from coast to coast.

Brought to you by the editors of *WOOD* magazine, *American Woodcrafts Gallery* is unlike any magazine you've ever seen. It combines original merchandise in a catalog format with informative magazine articles. And it deals solely with handcrafted wooden products: furniture, accessories, toys, and more. See *page 28.*

Better Homes and Gardens
AMERICAN WOODCRAFTS GALLERY
Fine gifts, home furnishings, & accessories

Photograph: John Hetherington Illustration: Jim Stevenson



SEE ANYTHING YOU NEED ?

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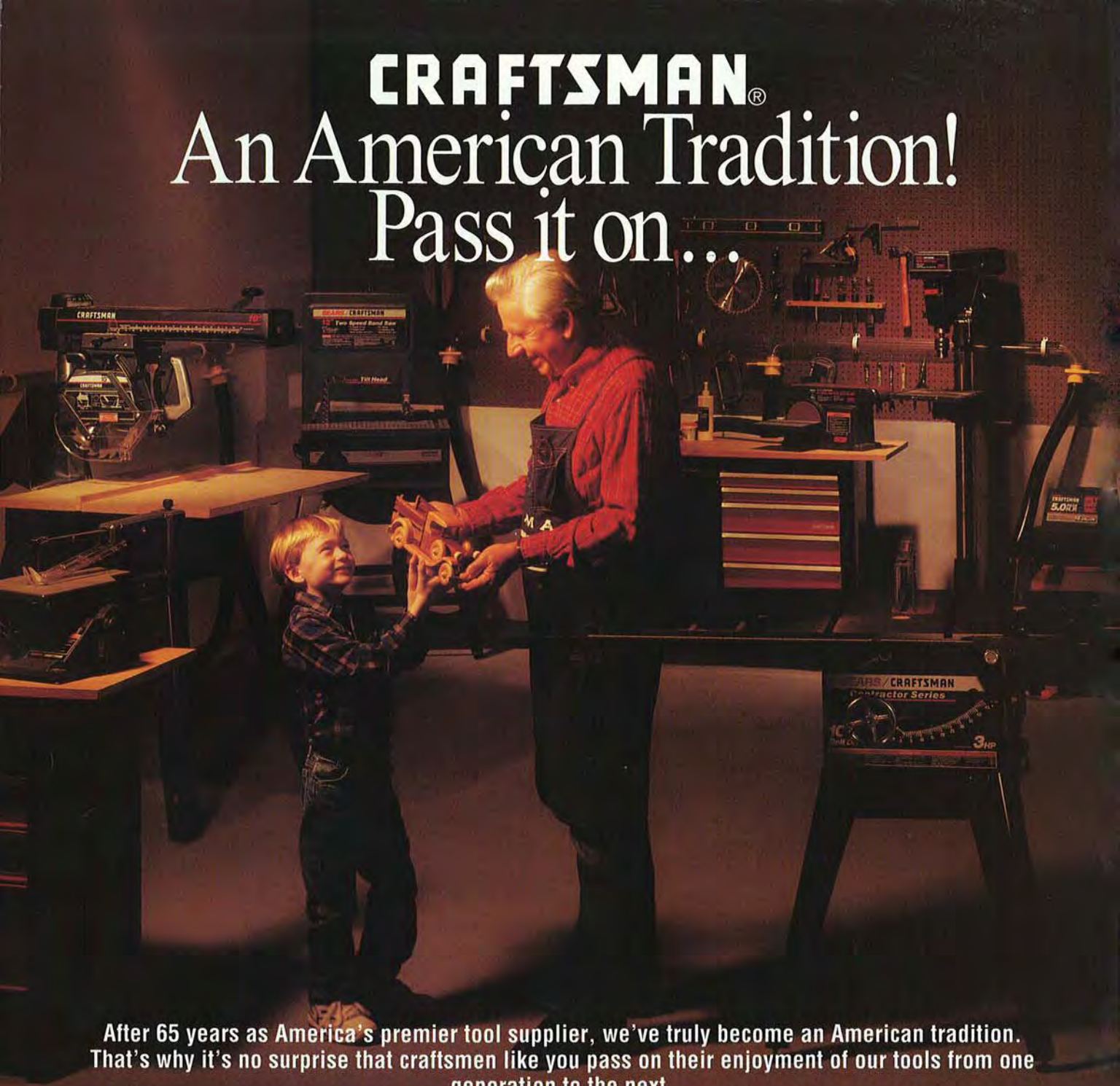


After 65 years as America's premier tool supplier, we've truly become an American tradition. That's why it's no surprise that craftsmen like you pass on their enjoyment of our tools from one generation to the next.

We're rather proud of that tradition, too.
Because it says a lot about the quality and durability of Craftsman tools.

Check out our complete line of radial saws. There's a host of features - like the patented blade guard and the easily accessible carriage bearings. Or take a look at our new wholeshop sawdust collection kit. Attached to your tools, it carries away most of the sawdust that would normally settle around your shop.

You can see the complete line of Craftsman power tools at your local Sears store.
Or for convenience, we offer the "Sears Shop At Home" service: 1-800-377-7414.

CRAFTSMAN®

Only at Sears

Wholeshop sawdust collection kit attaches to most stationary and benchtop power tools.

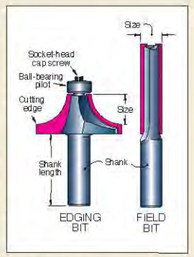
Router Bit Chart /clean 9/5/07 10:34 AM Page 1

WOOD® MAGAZINE'S GUIDE TO ROUTER BITS

No single tool can expand your woodworking horizons the way that a router will. With the right bits you can turn a plain project into a stunning masterpiece. First of all, you need to understand the basics about the many router bits on today's market, and that's where this chart comes in.

Anatomy of a router bit

With literally hundreds of router bit styles available from dozens of manufacturers, it's easy to get confused when making a purchasing decision. Fortunately, though, all router bits share several parts and traits. Here's a brief look at the components labeled in the drawing *right*, and a discussion of what you need to know about each of them.



BALL-BEARING PILOT
Typically located at the top of an edging bit, these small bearings (called pilots) ride along the edge of a workpiece. Unlike non-piloted bits, piloted edging bits do not require a fence or edge guide for steering them.

By changing the bearing diameter you can alter the cutting width and profile of the bit. For instance, one rabbeting bit can cut rabbets of various widths when you change the bearing. Also, a roundover bit fitted with a smaller bearing becomes a beading bit.

SOCKET-HEAD CAP SCREW
This tiny fastener holds the bearing in place. You need to remove and replace it with a hex key when changing bearings. Remember to replace the washers and spacers in the same order as they were removed.

SIZE
Most bits have a key dimension that is referred to when describing a bit of a particular size. As shown **above** and in the bits *right*, this dimension often refers to the width *or* radius of edging bits, and the diameter of field bits.

SHANK
The router's collet grips this portion of a router bit during use. You can buy most router bits with either ¼"- or ½"-diameter shanks, but larger bits come only with the sturdier ½" shanks. Since most bits with a ½" shank only cost about $1 more than a bit with a ¼" shank, we think it makes sense to buy bits with the thicker shanks whenever possible (provided your router accepts ½"-shank bits).

SHANK LENGTH
This dimension varies from manufacturer to manufacturer, even for bits similar in nearly every other respect. For safety's sake, and to prevent the shanks from bending during use, keep in mind that you should always secure at least 1" of the shank inside of the router collet. Whenever possible, try to expose no more than ½" of a ½"-diameter shank, or ¼" of a ¼"-diameter shank outside of the collet during use.

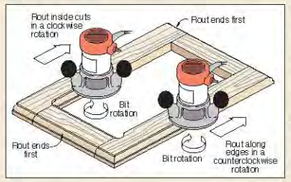
CUTTING EDGE
You can choose between router bits with steel or carbide cutting edges. Carbide is much harder than steel and so maintains a sharp edge many times longer. Carbide router bits cost a little more, but you'll find the money well spent if you intend to use the bit more than a few times.

What You Need To Know About Anti-Kickback Bits

In recent years, more and more manufacturers have incorporated anti-kickback design into their line of router bits—with good reason. These bits have more steel body behind each cutting edge, which effectively limits its cutting bite. Usually, you won't detect any slowdown in how fast you can feed stock into the router bit, but you will notice less "grabbing" and kickback. Although it's not practical to incorporate this feature into many small-diameter bits, it makes good safety sense to look for this feature in bits over 1" in diameter.

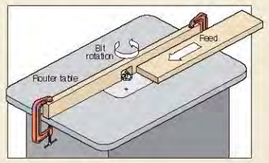
Some Pointers On Feed Direction

Whether you use a handheld router or one mounted in a table, you must always feed the stock *into* the rotation of the router bit. By doing so, the thrust of the router bit's rotation helps keep the bit in solid contact with the workpiece, fence, or template used to guide the bit or workpiece. Feeding stock *with* the rotation can cause your cut to wander, and the workpiece to be pulled out of control. Here are some guidelines for handheld and router-table operations:

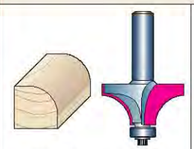

Rout inside cuts in a clockwise rotation
Rout ends first
Bit rotation
Rout ends first
Bit rotation
Rout along edges in a counterclockwise rotation

Handheld operation:
In this use, the bit turns clockwise as you look down on an upright router. This means you must feed a router in a counterclockwise, or left-to-right, fashion when working the outside edge of a workpiece, or guiding the router along a straightedge. Just the opposite is true on an inside cut; here you should feed the router clockwise.

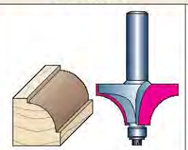
Router-table operation:
This one's simple. Always feed the workpiece from right-to-left. Never place the workpiece between the router bit and the fence.



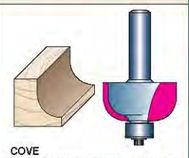
EDGING



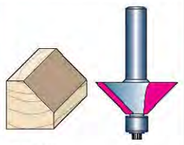
ROUNDOVER
Uses: Edges on tables, shelves, stair treads, and other projects. Making dowels, relieving sharp edges.
Sizes: Cutting radius ⅛-¾".



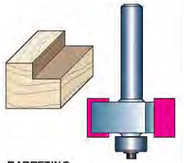
BEADING
Uses: Decorative edges on drawer fronts, cabinets, furniture, molding, and trim.
Sizes: Cutting radius ⅛-¾".



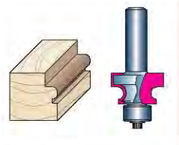
COVE
Uses: Decorative edges on drawer fronts, cabinets, furniture, molding, and trim. Used in combination with roundover bit to make drop-leaf table edges.
Sizes: Cutting radius ⅛-¾".



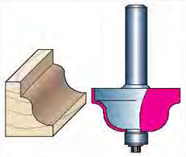
CHAMFER
Uses: Beveled edges on boards or laminates. Staved box and bowl construction.
Sizes: Cutting length ¼-1½"; Bevels range from 7° to 45°.



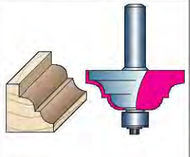
RABBETING
Uses: Cutting rabbets and lap joints. Change bearing size to change width of rabbet.
Sizes: Cutting width ⅛-½".



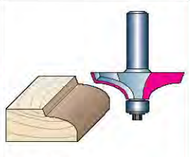
EDGE-BEADING
Uses: Forming decorative beads on edges of picture frames, moldings, and wainscoting.
Sizes: Bead diameter ⅛-¾".



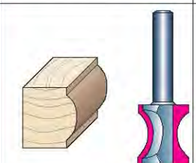
OGEE
Uses: Decorative edges on furniture, shelving, and molding.
Sizes: Cutting width ⅝-1½".



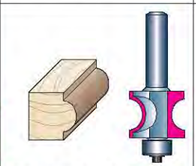
CLASSICAL
Uses: Decorative edges on furniture, shelving, and molding.
Sizes: Cutting width ⅝-1½".



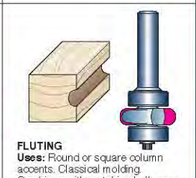
THUMBNAIL
Uses: Edge accent for tabletops, cabinet tops, chair rails, and hand rails.
Sizes: Cutting width ⅞-1".



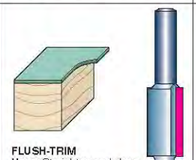
BULL-NOSE, HALF-RADIUS
Uses: Curved profiles for stair treads, shelving, and windowsills.
Sizes: Cutting diameter ¾-1½".



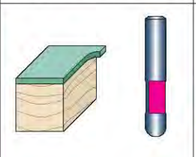
BULL-NOSE, FULL-RADIUS
Uses: Half-round profiles for stair treads, shelving, finger grips, and windowsills. Making dowels.
Sizes: Cutting diameter ¾-1½".



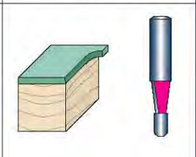
FLUTING
Uses: Round or square column accents. Classical molding. Combines with matching bull-nose, full-radius to make self-aligning joints for canoes, hot tubs, and planters.
Sizes: Cutting radius ⅛-⅜".



FLUSH-TRIM
Uses: Straighten and clean up edges of stock, flush-trim laminates, template cutting from bottom-mounted templates, and edge jointing.
Sizes: Cutting diameter ¼-¾".

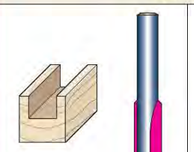


FLUSH LAMINATE-TRIM
Uses: Produce flush, square, and clean corners on plastic laminates, edge banding, and veneers.
Sizes: Cutting length ¼-⅜".

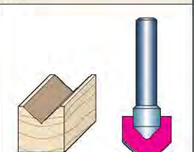


BEVEL LAMINATE-TRIM
Uses: Bevel edges on laminates, edge bandings, and veneers. Bevel angle normally 7°.
Sizes: Cutting length ¼".

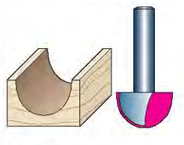
FIELD



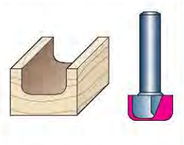
STRAIGHT
Uses: Rabbeting, mortises, inlays, dadoes, box joints, spline joints.
Sizes: Cutting diameter ⅛-1¼".



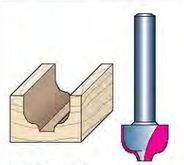
V-GROOVE
Uses: Lettering, veining, sign making, chamfering, decorative accents.
Sizes: Cutting diameter ⅛-1¾".



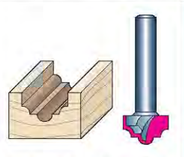
ROUND-NOSE/CORE-BOX
Uses: Fluting, veining, sign making, drawer-front finger pulls, decorative accents.
Sizes: Cutting diameter ⅛-2¼".



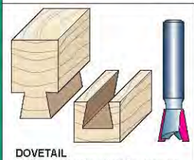
BOWL-AND-TRAY
Uses: Forming trays and shallow bowls.
Sizes: Cutting diameter 7/16-1¼".



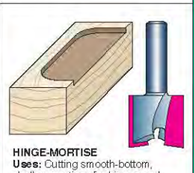
OGEE-PLUNGE
Uses: Decorative grooves, and edge molding with a straightedge or router table.
Sizes: Cutting diameter ⅜-1⅛".



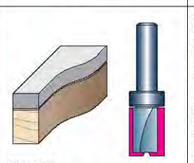
COVE-AND-BEAD PLUNGE
Uses: Decorative grooves, edge cutting with a straightedge or router table.
Sizes: Cutting diameter ½-¾".



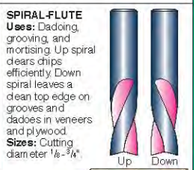
DOVETAIL
Uses: Decorative joints for drawers and boxes, sliding-drawer guides, sliding-dovetail joints for shelves, and chamfering.
Sizes: Cutting diameter ¼-1¼". Cutter angles 7°-16°.



HINGE-MORTISE
Uses: Cutting smooth-bottom, shallow mortises for hinges and hardware when used with template bushing. Also functions as a straight bit and flush-trim bit.
Sizes: Cutting diameter 5/16-1½".



PATTERN
Uses: Template routing from top-mounted template. Also functions as a flush-trim or straight bit.
Sizes: Cutting diameter 5/16-1½".

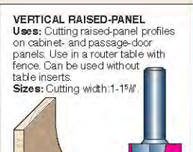


SPIRAL-FLUTE
Uses: Dadoing, grooving, and mortising. Up spiral clears chips efficiently. Down spiral leaves a clean top edge on grooves and dadoes in veneers and plywood.
Sizes: Cutting diameter ⅛-¾".

SPECIALTY

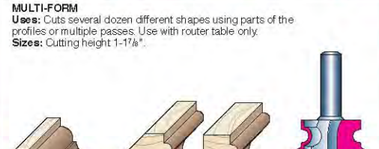
RAISED-PANEL STRAIGHT
Uses: Cutting raised-panel profiles on cabinet- and passage-door panels. Use in a router table only. Requires special inserts in table to accept larger diameters.
Sizes: Cutting width 13/16-1½".

RAISED-PANEL OGEE
Uses: Cutting raised-panel profiles on cabinet- and passage-door panels. Use in a router table only. Requires special inserts in table to accept larger diameters.
Sizes: Cutting width 13/16-1½".

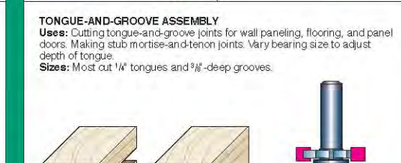


VERTICAL RAISED-PANEL
Uses: Cutting raised-panel profiles on cabinet- and passage-door panels. Use in a router table with fence. Can be used without table inserts.
Sizes: Cutting width 1-1⅝".

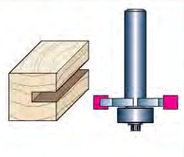
ARCHITECTURAL-MOLDING
Uses: Create wainscoting, chair rails, crown, and other architectural moldings. Dozens of profiles to choose from. Use with router table only.
Sizes: Cutting height ⅞-2".



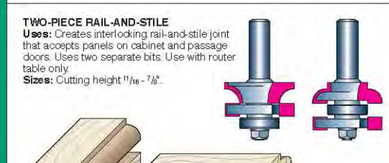
MULTI-FORM
Uses: Cuts several dozen different shapes using parts of the profiles or multiple passes. Use with router table only.
Sizes: Cutting height 1-1⅞".



TONGUE-AND-GROOVE ASSEMBLY
Uses: Cutting tongue-and-groove joints for wall paneling, flooring, and panel doors. Making stub mortise-and-tenon joints. Vary bearing size to adjust depth of tongue.
Sizes: Most cut ¼" tongues and ⅜"-deep grooves.



SLOT CUTTER
Uses: Biscuit joinery, slots, lap joints, tongue and groove, and T-molding.
Sizes: Cutting height 1/16-¼".



TWO-PIECE RAIL-AND-STILE
Uses: Creates interlocking rail-and-stile joint that accepts panels on cabinet and passage doors. Uses two separate bits. Use with router table only.
Sizes: Cutting height 11/16-⅞".

REVERSIBLE GLUE-JOINT
Uses: Creates interlocking, self-aligning joint for edge-joining panels.
Sizes: Cutting height 1-1¼".

LOCK-MITER
Uses: Self-aligning miter joints with extra gluing surface for strength. For boxes and drawers.
Sizes: Cutting height ⅞-1¼".

KEYHOLE
Uses: Use with plunge router for hanging pictures and plaques flush to a wall or surface. Cutting T-slots.
Sizes: Large diameter ⅜-½".

FINGER-JOINT
Uses: Edge joining and scarf joints. Joins short lengths of stock end grain to end grain in order to make longer pieces.
Sizes: Cutting length 9/16-1½".

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■ Indicates cutting portion of bit.